

utilized by USWS for fracking are referred to as “fleets.” The USWS fleets at the well sites perform fracking services for varied USWS customers under different contracts.

4. In 2020, during the period of layoffs at issue in this litigation, I was employed by USWS as the Vice President of Finance. In April 2022, I was appointed as Chief Financial Officer.

5. In early 2020, USWS had seven (7) separate single sites of employment located in different parts of the country. The locations of these were: (1) Headquarters - 1360 Post Oak Blvd Suite 1800, Houston, TX 77056, (2) Bryan Production Facility - 2870 N Harvey Mitchell Pkwy, Bryan, TX 77807, (3) Pleasanton Production Facility - 283 Shale Road, Pleasanton, TX 78064, (4) San Angelo Production Facility - 6728 Highway 853, San Angelo, Texas 76901, (5) Uhrichsville Production Facility – 159 North Wardell Street, Uhrichsville, Ohio 44683, (6) Williamsport Production Facility – 80 Fitness Drive, Muncy, PA 17756, and (7) Jane Lew Production Facility - 533 Industrial Park Road, Jane Lew, West Virginia 26378. USWS’s corporate headquarters is a non-contiguous facility located in a Houston stand-alone office building. The other single sites of employment are in completely separate locations across the country and all have their own staff, buildings, equipment and equipment maintenance facilities where their fracking crews and equipment would be based out of for operations at well sites out in the field.¹ These would include bays to work on the heavy-duty fracking equipment, as well as front offices, training rooms and locker rooms. The USWS production facilities are internally referred to as “Districts.”

6. As measured by Google Maps, the locations of the production facilities range from 101 to 1546 miles from USWS’s corporate headquarters, and in some cases, cross multiple

¹ See Photographs of the USWS Production Facilities, attached as Exhibit "A".

state lines.² As shown on the table below, also as measured by Google Maps, USWS's production facilities are separated from each other by distances ranging from 209 to 1744 miles. A Google Earth map of the United States showing the locations of each USWS locations places in context the significant distances separating each location from USWS's corporate headquarters, as well as from each other.³

	Houston	Bryan	Pleasanton	San Angelo	Uhrichsville	Williamsport	Jane Lew
Houston	0	101	224	363	1273	1546	1302
Bryan	101	0	209	284	1245	1530	1251
Pleasanton	224	209	0	256	1459	1744	1465
San Angelo	363	284	256	0	1412	1693	1420
Uhrichsville	1273	1245	1459	1412	0	274	177
Williamsport	1546	1546	1744	1693	274	0	296
Jane Lew	1302	1251	1465	1420	177	296	0

7. At each USWS District, a District Manager controlled day-to-day operations. Each District made its own hiring, staffing, and termination decisions.

8. Prior to March 2020, the Company was busy doing work for oil producers and the oil market was maintaining a commercially viable price. USWS's forecast for 2020 was highly positive. USWS's optimism was shared by the oil industry. In January 2020, the International Energy Association ("IEA") released its Oil Market Report showing increased oil demand for the rest of 2020⁴ and USWS's review of other oil analysts likewise showed predictions of increased demand for 2020.⁵ According to the U.S. Energy Information Administration ("EIA"), the spot price of oil in the first two months of 2020 generally remained at a range between \$50.00 and

² See Google Maps Printouts, attached as Exhibit "B".

³ See Google Earth Map, attached as Exhibit "C".

⁴ See International Energy Association, *Oil Market Report – January 2020*, attached as Exhibit "D", <https://www.iea.org/reports/oil-market-report-january-2020>.

⁵ See Petroleum Economist, *Oil Demand to Rebound in 2020*, (January 3, 2020) Attached as Exhibit "E", <https://www.petroleum-economist.com/articles/markets/trends/2020/oil-demand-to-rebound-in-2020>.

\$60.00 per barrel.⁶ In light of these positive business signs, USWS expanded its workforce by more than ten percent in January 2020, and further increased its workforce by the end of February 2020.

9. The unprecedented and unforeseeable consequences of COVID-19 and its impact on the world economy triggered the collapse of the oil market in March 2020. In the last week of February 2020, the spot price per barrel of oil, as benchmarked by the EIA, started above \$50 per barrel but by week's end, had dropped to \$44.83 per barrel. It remained below \$50 the first week of March and then the following Monday, plunged to \$31.05. In the following days and weeks, oil prices continued to collapse. As shown by the EIA benchmark, the price per barrel dropped below \$30.00 on March 16, 2020, and below \$20.00 per barrel on March 20, 2020, and further dropped to \$14.01 per barrel by March 30, 2020. The price collapse continued. On April 20, 2020, it had deteriorated to minus \$36.98 per barrel, the first time in history oil prices had ever fallen below zero, edging back up to \$8.91 per barrel the following day.⁷

10. With oil prices at historic lows, the cost of production was no longer commercially viable, and USWS's customers quickly decided to completely shut down the fracking work USWS had been performing at multiple well sites in different parts of the country. As a consequence of the rapid loss of business, and the inability to secure alternate work due to the crisis in the oil market, USWS instituted layoffs at each of the single sites of employment Districts.

11. The layoffs made by USWS were taken to ensure the survival of the Company and to preserve the employee jobs that remained after the loss of the customer work and the major loss of revenue. Because of USWS's rapid response, it was able to negotiate with its

⁶ See U.S. Energy Information Administration, *Excerpt of Cushing, OK WTI Spot Price FOB*, Attached as Exhibit "F", <https://www.eia.gov/dnav/pet/hist/RWTCDD.htm>.

⁷ See Exhibit "F" (U.S. Energy Information Administration, *Excerpt of Cushing, OK WTI Spot Price FOB*)

lenders to allow the Company to survive through the crisis. USWS's competitors in the fracking industry have not fared as well under the same circumstances. I am aware that other competing fracking companies filed for Chapter 11 bankruptcy.⁸

12. Pursuant to 28 U.S.C. § 1746, I certify under penalty of perjury that I have read the foregoing Declaration and that it is true and correct to the best of my knowledge, information, and belief. I am signing this Declaration of my own free will, and no one coerced me to do so.

1/27/2023

Signed this ____ day of January 2023

DocuSigned by:

Joshua Shapiro

05/25/2023 10:41 AM
JOSHUA SHAPIRO

⁸ See Reuters, *Oil Firm BJ Services Files for Chapter 11 Bankruptcy* (July 20, 2020), Attached as Exhibit "G", <https://www.reuters.com/article/us-bj-services-bankruptcy-urgent/oil-firm-bj-services-files-for-chapter-11-bankruptcy-idUSKCN24L0HN>



USWS FACILITY (SAN ANGELO)

**6728 HIGHWAY 853
SAN ANGELO, TEXAS 76901**

**EXHIBIT
A**



USWS FACILITY (PLEASANTON)
283 SHALE ROAD, PLEASANTON, TEXAS 70864



USWS FACILITY (BRYAN)
2870 N. HARVEY MITCHELL PKWY
BRYAN, TEXAS 77807



USWS FACILITY (WILLIAMSPORT)

**80 FITNESS DRIVE
MUNCY, PENNSYLVANIA 17756**



USWS FACILITY (UHRICHSVILLE)
159 NORTH WARDELL STREET
UHRICHSVILLE, OHIO 44683



USWS FACILITY (JANE LEW)
533 INDUSTRIAL PARK ROAD
JANE LEW, WEST VIRGINIA 26378



USWS HEADQUARTERS
1360 POST OAK BLVD, SUITE 1800
HOUSTON, TEXAS 77056

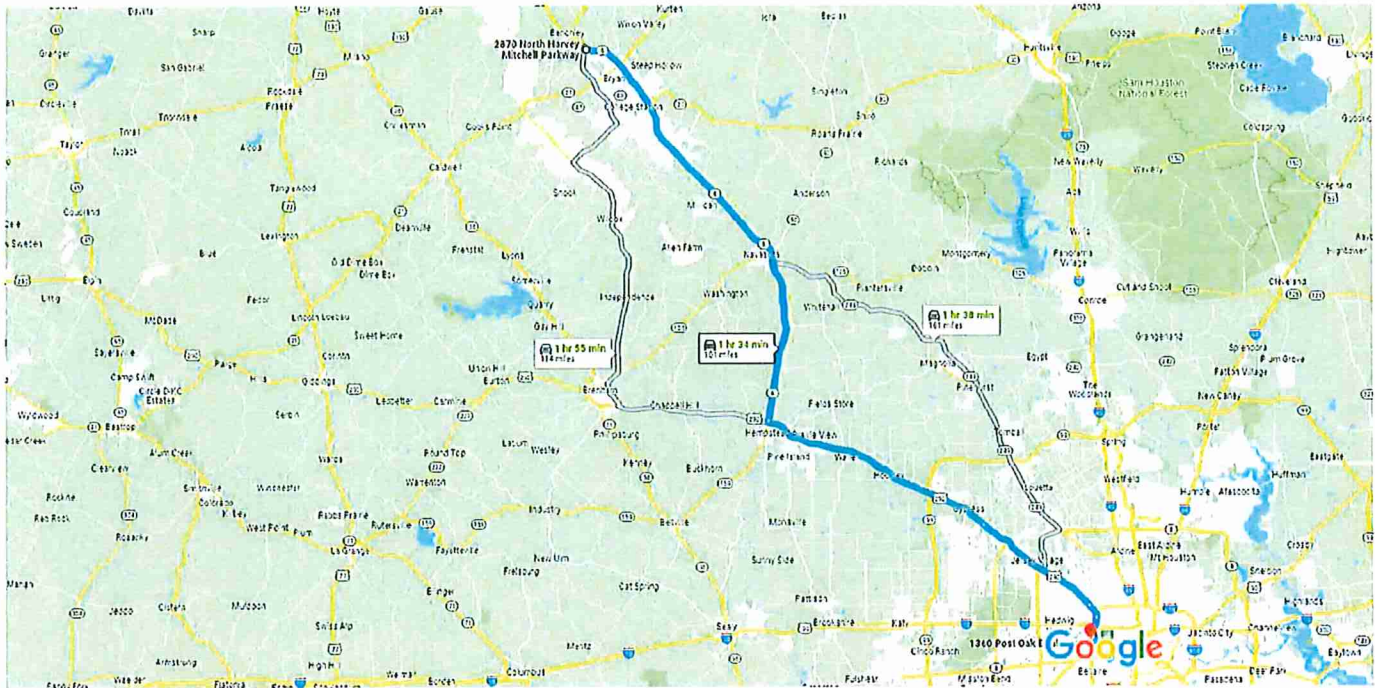
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2870 N Harvey Mitchell Pkwy, Bryan, TX to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps






2870 N Harvey Mitchell Pkwy, Bryan, TX 77807
to 1360 Post Oak Blvd, Houston, TX 77056

Drive 101 miles, 1 hr 34 min



Map data ©2022 Google 5 mi

- 
via Hwy 6 S and US-290 E 1 hr 34 min
 Fastest route now due to traffic conditions 101 miles
- 
via Hwy 6 S and TX-249 1 hr 38 min
 101 miles
- 
via US-290 E 1 hr 55 min
 114 miles

Explore 1360 Post Oak Blvd

Restaurants Hotels Gas stations Parking Lots Less

**EXHIBIT
B**

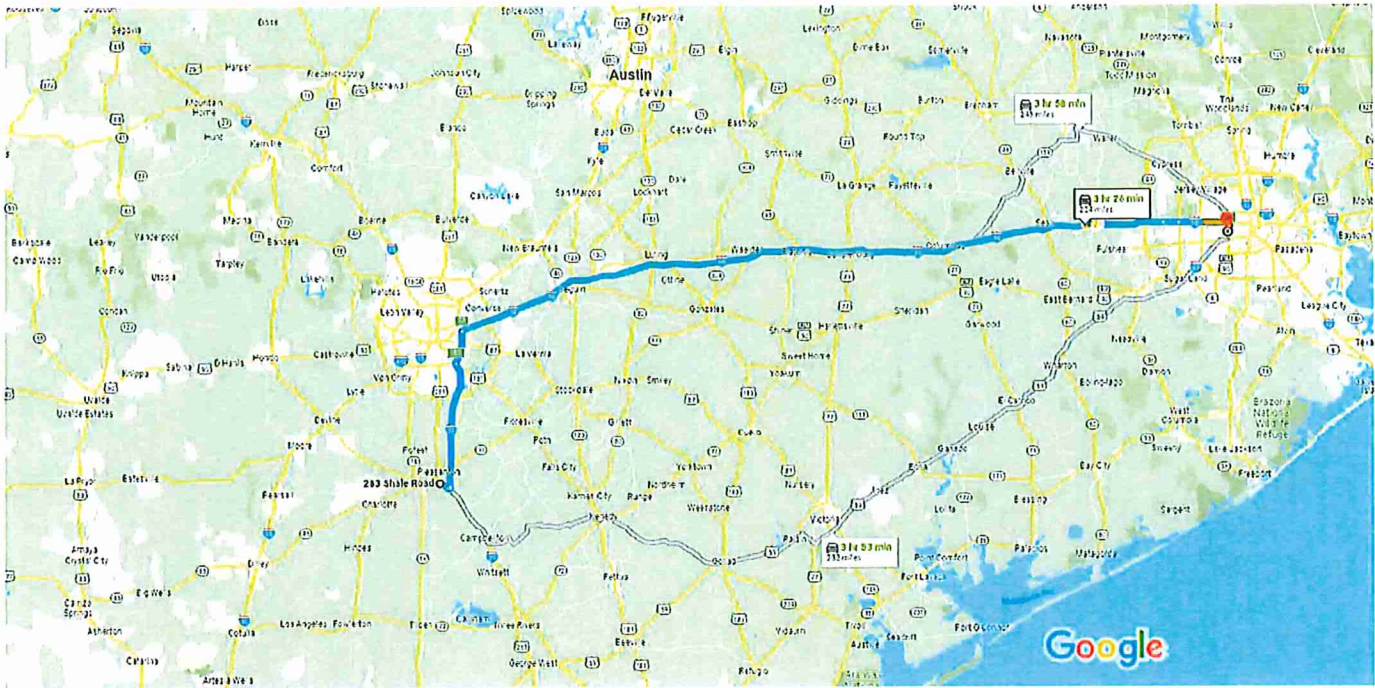
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283 Shale Road, Pleasanton, TX to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps






283 Shale Rd, Pleasanton, TX 78064 to 1360
Post Oak Blvd, Houston, TX 77056

Drive 224 miles, 3 hr 26 min



Map data ©2022 Google, INEGI 10 mi

- 
via I-10 E **3 hr 26 min**
 Fastest route now due to traffic conditions **224 miles**
- 
via US-59 N **3 hr 53 min**
232 miles
- 
via I-10 E and US-290 E **3 hr 58 min**
248 miles

Explore 1360 Post Oak Blvd

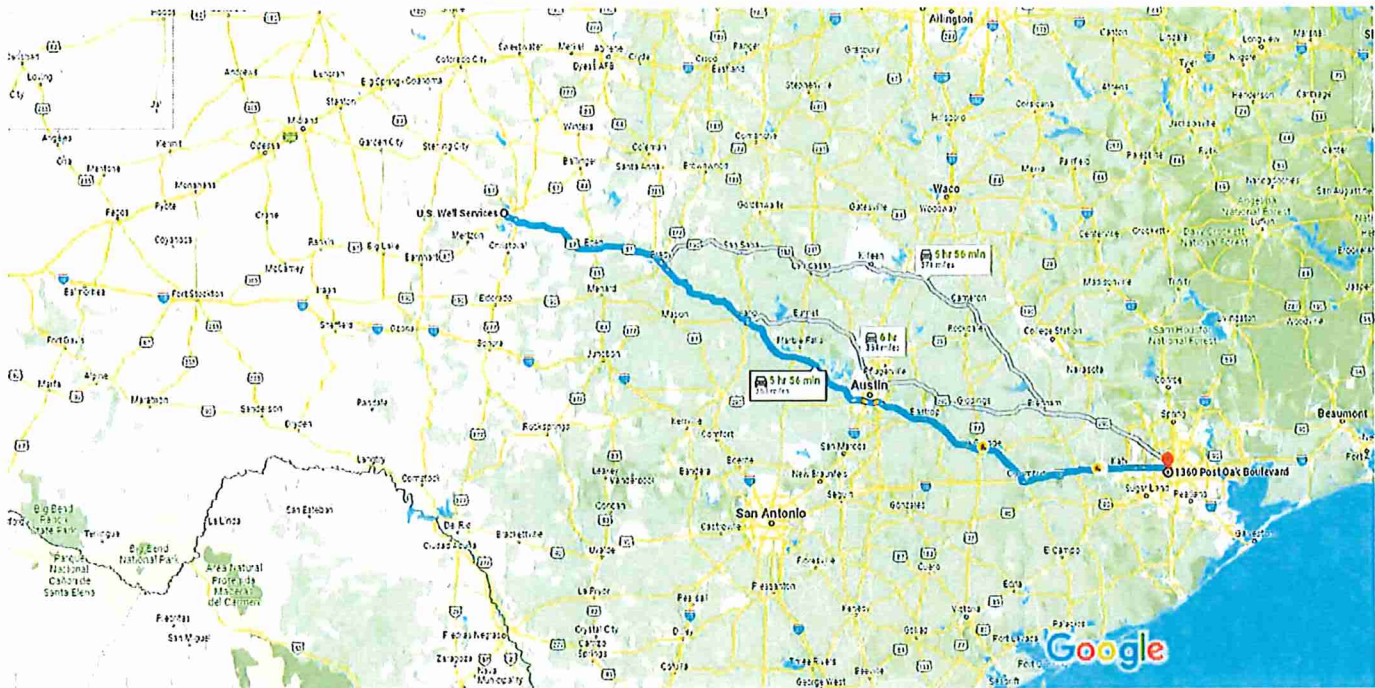
Restaurants Hotels Gas stations Parking Lots More

12/12/22, 2:16 PM





U.S. Well Services to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps



U.S. Well Services, 6728 Hwy 853, San Angelo, TX 76901 to 1360 Post Oak Blvd, Houston, TX 77056 Drive 363 miles, 5 hr 56 min



Map data ©2022 Google, INEGI 20 mi

- 
via State Hwy 71 E **5 hr 56 min**
 Best route now due to traffic conditions **363 miles**
 This route has tolls.
- 
via US-87 S **5 hr 56 min**
371 miles
- 
via US-290 E **6 hr**
364 miles

Explore 1360 Post Oak Blvd

Restaurants Hotels Gas stations Parking Lots More

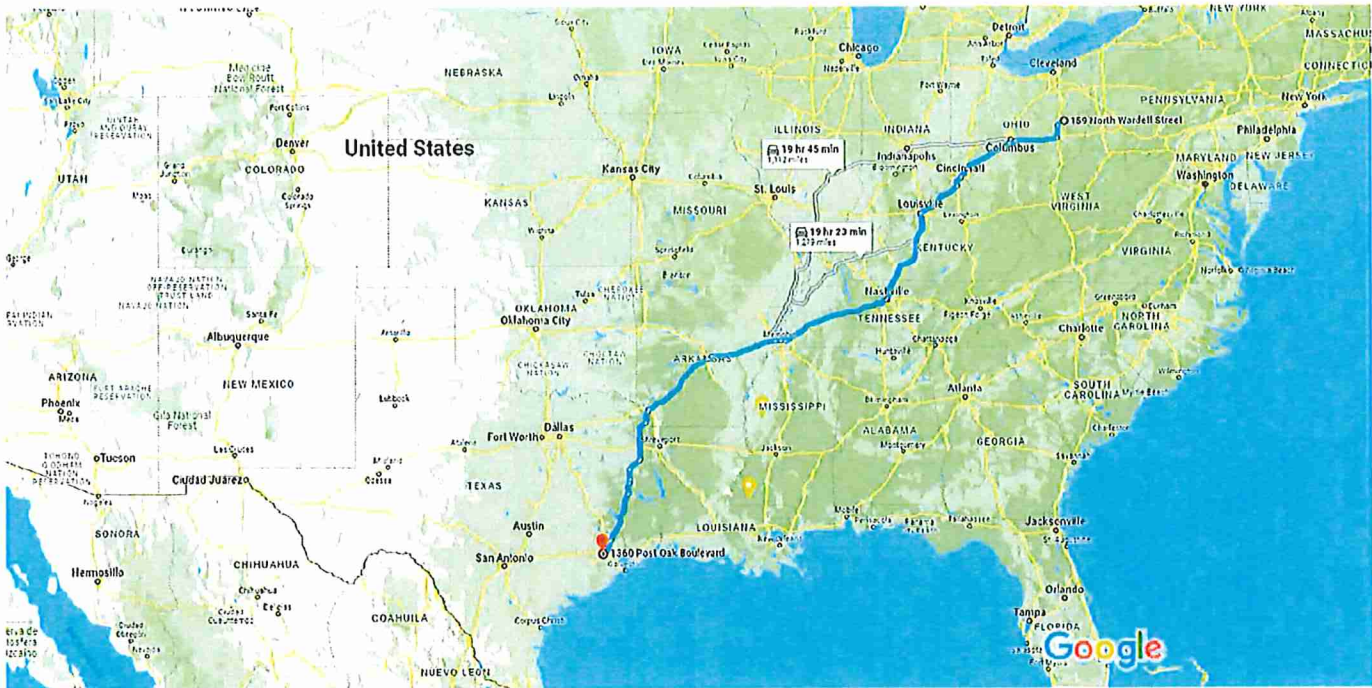
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159 North Wardell Street, Uhrichsville, OH to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps

Google Maps

159 N Wardell St, Uhrichsville, OH 44683 to
1360 Post Oak Blvd, Houston, TX 77056

Drive 1,273 miles, 19 hr 14 min



Map data ©2022 Google, INEGI

100 mi



via I-71 S

19 hr 14 min

19 hr 14 min without traffic

1,273 miles

⚠ Your destination is in a different time zone.



via I-71 S and US-59 S

19 hr 23 min

19 hr 23 min without traffic

1,279 miles



via I-70 W

19 hr 45 min

19 hr 45 min without traffic

1,312 miles

Explore 1360 Post Oak Blvd

Restaurants

Hotels

Gas stations

Parking Lots

More

12/12/22, 2:18 PM





80 Fitness Drive, Muncy, PA to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps



80 Fitness Dr, Muncy, PA 17756 to 1360 Post Oak Blvd, Houston, TX 77056 Drive 1,546 miles, 22 hr 51 min



Map data ©2022 Google, INEGI 100 mi

- 
via I-81 S and I-59 S **22 hr 51 min**
 22 hr 51 min without traffic 1,546 miles
 Your destination is in a different time zone.
- 
via I-71 S **23 hr 29 min**
 23 hr 29 min without traffic 1,557 miles
- 
via I-59 S **23 hr 47 min**
 23 hr 47 min without traffic 1,596 miles

Explore 1360 Post Oak Blvd

Restaurants Hotels Gas stations Parking Lots More

12/12/22, 2:19 PM

533 Industrial Park Road, Jane Lew, WV to 1360 Post Oak Blvd, Houston, TX 77056 - Google Maps






533 Industrial Park Rd, Jane Lew, WV 26378
to 1360 Post Oak Blvd, Houston, TX 77056

Drive 1,302 miles, 19 hr 15 min



Map data ©2022 Google, INEGI 100 mi

- 
via I-59 S 19 hr 15 min
 19 hr 15 min without traffic 1,302 miles
 ⚠️ This route has tolls.
 ⚠️ Your destination is in a different time zone.
- 
via I-40 W 19 hr 16 min
 19 hr 16 min without traffic 1,276 miles
- 
via US-59 S 19 hr 24 min
 19 hr 24 min without traffic 1,282 miles

Explore 1360 Post Oak Blvd

Restaurants Hotels Gas stations Parking Lots More

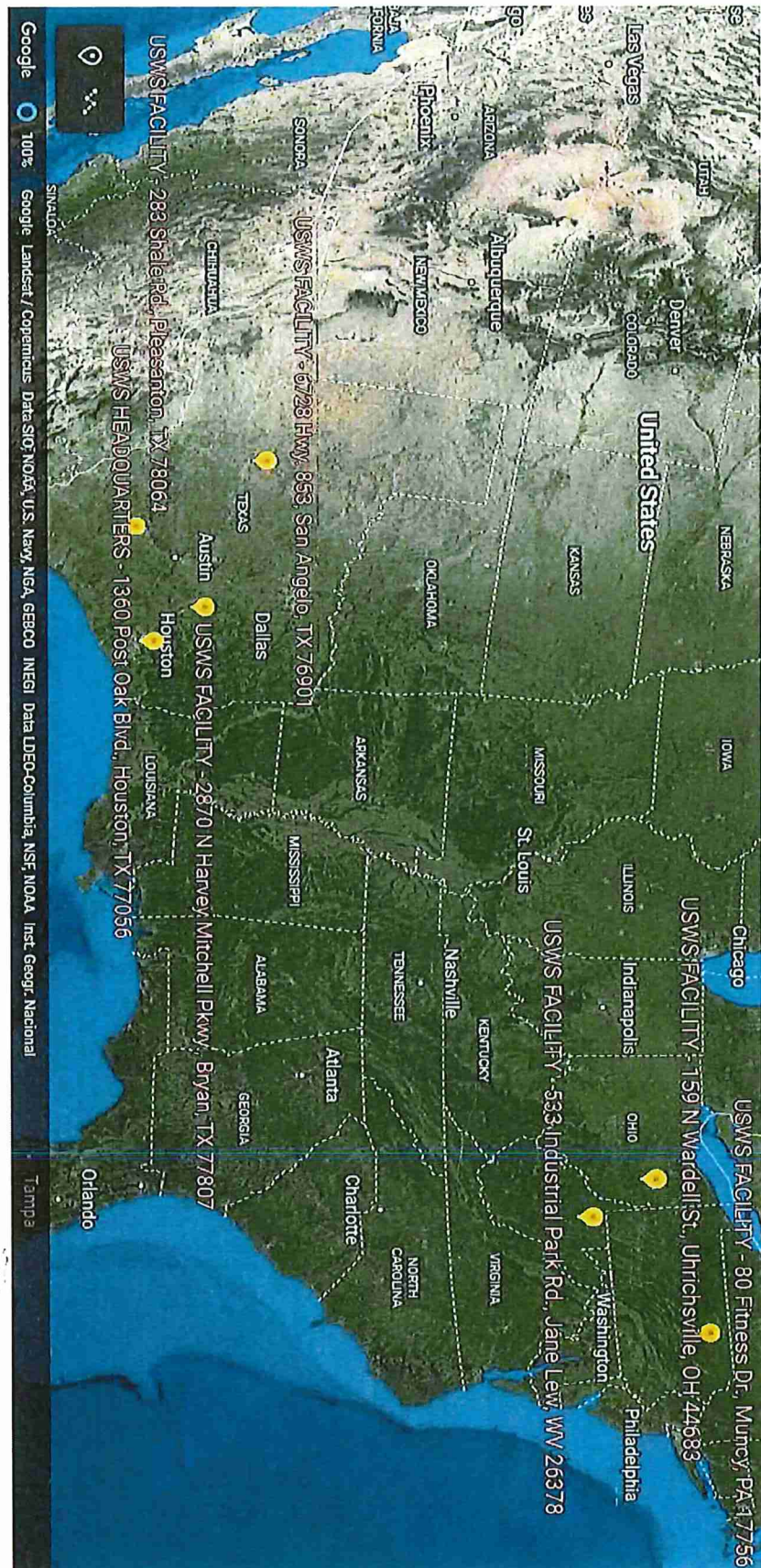


EXHIBIT
C



International
Energy Agency

Oil Market Report

16 January 2020

- Global oil supply tumbled 780 kb/d in December as biofuels production declined seasonally and Saudi Arabia reduced output. At 100.7 mb/d, the global total was down 1.3 mb/d on a year ago, with OPEC supply 2.4 mb/d lower. With non-OPEC oil supply growth accelerating from 2 mb/d in 2019 to 2.1 mb/d this year, the call on OPEC crude falls to 28.5 mb/d during 1H20 compared with December production of 29.44 mb/d. Steeper OPEC+ cuts take effect this month.
- Global oil demand rose by 955 kb/d y-o-y to 101.1 mb/d in October and for 4Q19 it is estimated to have grown by 1.9 mb/d versus a low 4Q18 level. We see continued strong momentum in non-OECD countries with China and India demand growing 0.8 mb/d and 0.5 mb/d respectively in November. US demand is flat in 2019. Our global demand growth forecasts for 2019 and 2020 remain unchanged, at 1 mb/d and 1.2 mb/d.
- For 4Q19 and 2019 as a whole global refinery runs are estimated to have declined by 0.2 mb/d y-o-y. Refining margins continued falling in December due to higher crude prices, and exceptions were largely due to widening sour crude differentials. Global refining intake in 2020 is forecast to increase by 1.1 mb/d, supported by a recovery in refined product demand, estimated to grow by 0.8 mb/d.
- OECD industry stocks fell 2.9 mb in November to 2 912 mb. They were 8.9 mb above the five-year average and covered 60.6 days, 0.6 days below the average. Preliminary data for December showed inventories building in the US and Europe and falling in Japan. Short-term floating storage of crude oil built 4.5 mb in December to 66.5 mb. The number of Iranian VLCCs used for floating storage increased by two to 28.
- ICE Brent surged \$4/bbl following US/Iran clashes in Iraq in early January but prices have retreated below \$65/bbl as supplies were not interrupted. As the new IMO rules are introduced, cracks for compliant VLSFO made large gains and HSFO in Singapore drew some support on demand from ships fitted with scrubbers. Freight rates strengthened due to the IMO transition to more expensive shipping fuels and escalating tensions in the Middle East Gulf.

EXHIBIT
D

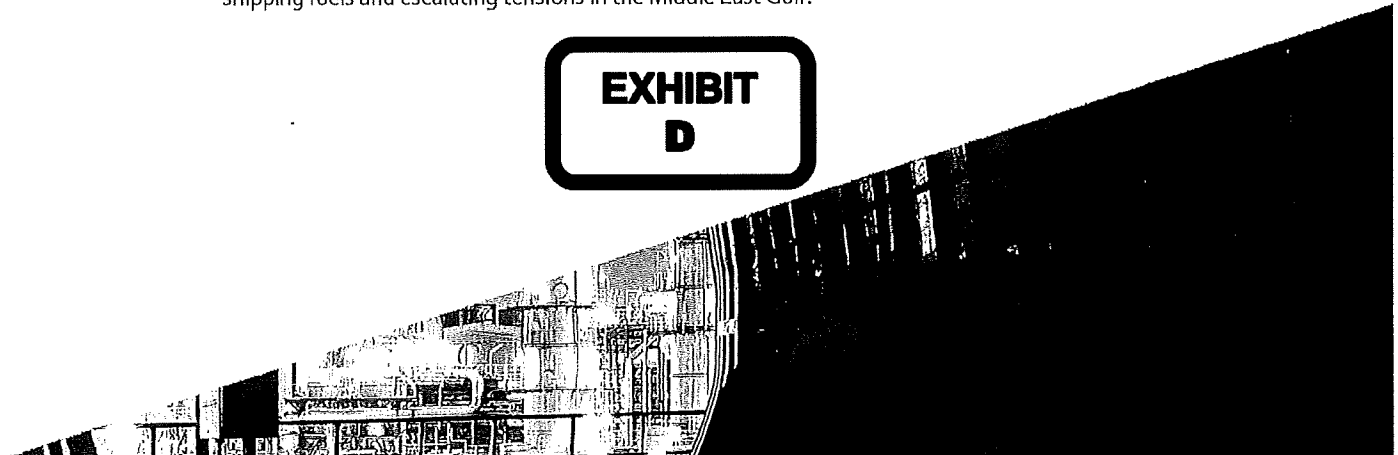


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Coping with tension and regulation

The recent tension in the Middle East has once again added a layer of uncertainty to the oil market outlook. We cannot know how the geopolitical situation will play out over time, but for now the risk of a major threat to oil supplies appears to have receded. As was the case following the attacks on Saudi Arabia in September, once the initial fears of a sustained supply shock subsided, the Brent price rapidly gave up its \$4/bbl spike and as we publish this *Report* it is just above \$64/bbl, little changed from immediately after the OPEC+ agreement was signed in December. Today's market where non-OPEC production is rising strongly and OECD stocks are 9 mb above the five-year average, provides a solid base from which to react to any escalation in geopolitical tension. As a back-up resource, the value of strategic stocks has once again been confirmed.

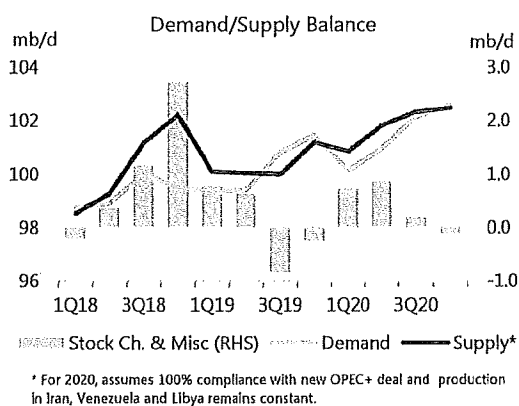
Recent events have shown that Iraq is a potentially vulnerable supplier, just as its strategic importance has grown. In recent years production and export capacity have expanded fast: in 2010 Iraq exported 2 mb/d and now the figure is 4 mb/d. Iraq's rising capacity has been very welcome as sanctions have reduced Iran's exports to only 0.3 mb/d and Venezuela's production has collapsed. Today, both China and India receive about 1 mb/d of oil from Iraq and another 1 mb/d moves to various European countries. In India's

case, around 20% of its crude imports come from Iraq. Amongst Iraq's other customers is the US. Data from the Energy Information Administration show that in January-October 2019 the US imported 337 kb/d from Iraq, and just below 1 mb/d from the Middle East Gulf as a whole. In the medium term heightened security concerns might make it more difficult for Iraq to build production capacity. In turn, this could make it more difficult to ensure there is sufficient spare production capacity to meet rising global demand in the second half of this decade.

In this *Report*, our main headline data for 2020 is largely unchanged from last month. Oil demand growth is forecast to accelerate to 1.2 mb/d, supported partly by prices remaining relatively subdued, higher global GDP growth than last year and by progress in settling trade disputes. The OPEC+ countries need to cut output by about 0.3 mb/d in January to comply with their new agreement. Meanwhile, non-OPEC production is forecast to grow by 2.1 mb/d in 2020 with stronger growth in the first half of the year.

The International Maritime Organisation's new marine fuel regulations came into effect on 1 January. Although there are initial local difficulties as might be expected from such a complex global change, ship operators, products suppliers and ports have so far coped well (see *page 13* of this *Report*).

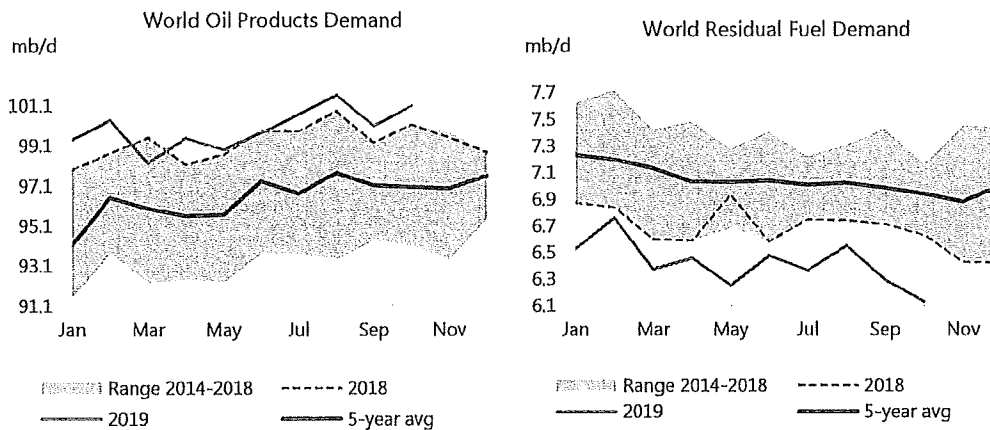
At the start of 2020 the oil market has again faced a period of geopolitical turmoil at the same time as a significant sector is adjusting to a major change to its operating environment. That we have such a well-supplied and increasingly globalised market will help us to face these challenges.



Demand

Overview

Global oil demand rose by 955 kb/d year-on-year (y-o-y) to 101.1 mb/d in October, the latest month for which complete figures are available. This was the fastest annual growth rate since April and confirms the acceleration seen since July. As in previous months, the bulk of the growth occurred in China (+720 kb/d), followed by Saudi Arabia (+290 kb/d) and Brazil (+125 kb/d), whereas demand fell by 425 kb/d in the OECD and was stagnant in India.



Global fuel oil demand fell by a sharp 500 kb/d y-o-y in October to 6.1 mb/d, its lowest level in more than a decade. Refiners cut output and ship and port operators emptied stocks ahead of the 1 January 2020 implementation of the International Maritime Organisation rules on fuel quality. The latest data already available for Singapore and Rotterdam show a large jump in very low sulphur fuel oil (VLSFO) deliveries in November. VLSFO is part of the residual fuel category, even if it includes a significant portion of gasoil (See *IMO switch in the making*).

Global Oil Demand (2018-2020)															
	(million barrels per day)*														
	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Africa	4.3	4.2	4.1	4.3	4.2	4.4	4.3	4.2	4.3	4.3	4.4	4.4	4.2	4.4	4.4
Americas	31.6	31.7	32.3	32.0	31.9	31.6	31.8	32.3	32.3	32.0	31.6	32.0	32.6	32.5	32.2
Asia/Pacific	35.4	35.0	34.6	35.3	35.1	35.9	35.5	35.2	36.5	35.8	36.8	36.5	36.0	37.3	36.6
Europe	14.8	15.0	15.4	14.9	15.0	14.7	14.9	15.4	15.0	15.0	14.8	15.0	15.4	15.2	15.1
FSU	4.5	4.6	4.9	4.8	4.7	4.6	4.7	5.0	4.9	4.8	4.7	4.8	5.1	5.0	4.9
Middle East	8.1	8.4	8.7	8.2	8.3	8.1	8.2	8.8	8.3	8.4	7.9	8.3	8.8	8.2	8.3
World	98.7	98.9	100.0	99.5	99.3	99.3	99.4	100.8	101.4	100.3	100.1	100.9	102.1	102.6	101.5
Annual Chg (%)	2.1	0.6	1.4	0.6	1.1	0.6	0.5	0.8	2.0	1.0	0.8	1.5	1.3	1.1	1.2
Annual Chg (mb/d)	2.0	0.6	1.3	0.6	1.1	0.6	0.5	0.8	1.9	1.0	0.8	1.5	1.3	1.1	1.2
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	-0.5	0.1	0.0	0.2	0.1	-0.4	-0.1	-0.1

* Including biofuels

Global oil demand likely accelerated further over November and December. Oil demand is estimated to have grown by a significant 1.9 mb/d in 4Q19, the most since 1Q18, due to continued strong momentum in Asia Pacific and expansion in the US petrochemical sector. In a

number of OECD countries (e.g. Korea and Turkey), growth was weak in 4Q18 and a significant rebound to normal levels of consumption is expected for 4Q19. Additionally, global oil demand is likely to have been boosted by lower oil prices: in 4Q19 oil prices (Brent) averaged about 10% below 4Q18 levels. However, mild temperatures in the northern hemisphere have dampened heating oil, kerosene and LPG deliveries.

Global Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q19	2Q19	3Q19	2Q19	3Q19	2Q19	3Q19
LPG & Ethane	13 082	12 003	12 323	- 2	164	0.0	1.4
Naphtha	6 809	6 158	6 366	- 277	- 116	-4.3	-1.8
Motor Gasoline	25 744	26 675	26 927	466	253	1.8	0.9
Jet Fuel & Kerosene	7 985	7 854	8 204	141	104	1.8	1.3
Gas/Diesel Oil	28 433	28 794	28 912	259	601	0.9	2.1
Residual Fuel Oil	6 534	6 378	6 390	- 314	- 331	-4.7	-4.9
Other Products	10 746	11 544	11 713	217	149	1.9	1.3
Total Products	99 333	99 406	100 834	492	824	0.5	0.8

Data for November point to continued strong growth in China (+825 kb/d), a sharp rebound in India (+535 kb/d) following the monsoon season and higher sales in some parts of the OECD (e.g. Korea and the US) but not others (e.g. Japan, Germany, and Italy). Global oil demand is estimated to have grown by 965 kb/d (rounded to 1 mb/d) in 2019, down from 1.1 mb/d in 2018. For 2020, we expect growth to accelerate to 1.2 mb/d, below the 10-year average of 1.5 mb/d.

Fundamentals

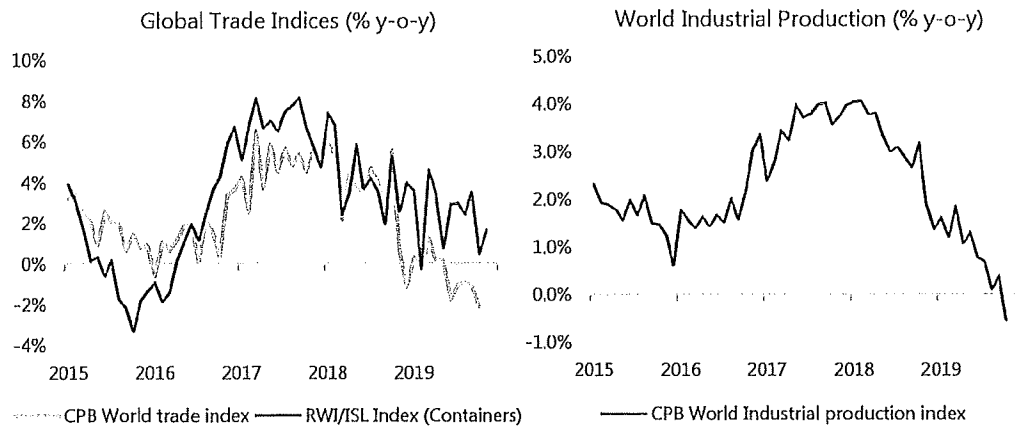
Economic assumptions supporting this *Report's* projections remain unchanged. After rising by 3% in 2019, world GDP (in purchasing power parity terms) is expected to increase at a faster rate of 3.4% in 2020. While recent prompt economic indicators remain mixed, trade tensions have eased. The US-Japan trade agreement, the US-Mexico-Canada agreement and the phase one trade agreement between China and the US should support growth. Although the US-China agreement is a major step forward, US tariffs of 25% on \$250 billion (bn) of Chinese goods remain unchanged and will be part of subsequent negotiations.

Economic forecasts from the International Monetary Fund (used in our projections), the World Bank and the OECD, generally assume that trade measures taken until now will be maintained through the forecast period. The World Bank, for example, reduced in January its projections for the world economy (compared with its June forecast) and specified that its forecasts "assume no further escalation or reduction in trade restrictions going forward". A further decline in trade tensions could lead to a stronger pick up in world economic activity.

Lower trade tensions would be welcomed, as recent prompt indicators showed deteriorating world trade and industrial activity in October. Global trade, tracked by the CPB Netherlands Bureau for Economic Policy Analysis, has been around 1% below the previous year's level since July 2019 and in October, dropped by 2.1% y-o-y. World industrial production growth also declined by 0.5% y-o-y, whereas container trade has been more resilient.

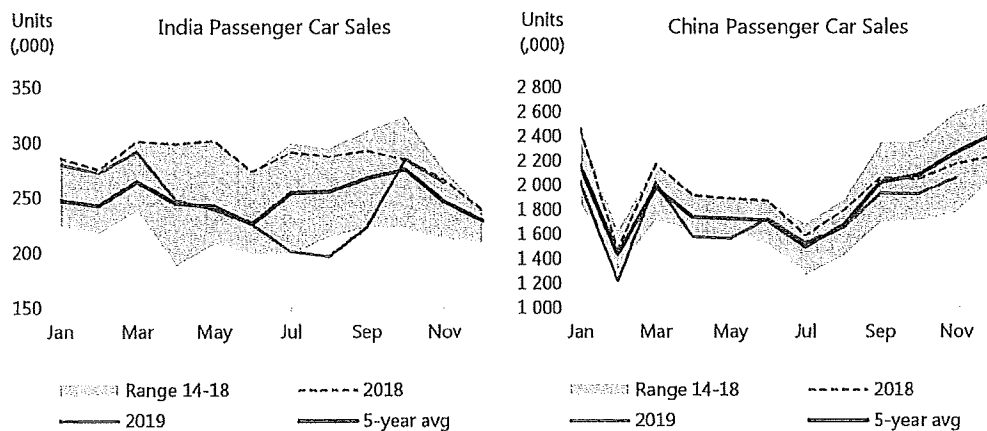
Oil Market Report

Demand



The latest indicators for the US have generally pointed to slower growth. US industrial production contracted in the last three months of data available and by 0.75% y-o-y in November. The December non-farm payroll rose by 145 000, maintaining the unemployment rate at 3.5%.

China's prompt indicators reflect a stabilisation in economic activity. Industrial production growth accelerated to 6.2% in November from 4.7% in October and retail sales rose by 8% y-o-y. The Caixin-Markit manufacturing PMI remained well above 50, at 51.5 in December, even if it was slightly down from 51.8 in November. The official manufacturing PMI was at 50.2 in December. Economic policy remains supportive, as the government brought forward \$142 bn of provincial special bond quotas used to finance infrastructure projects.



Indian data also appear relatively supportive. Manufacturing activity rose by 2.7% y-o-y in November after a contraction of 2.1% in October. Total industrial production rose 1.8% y-o-y after several weak months. Advanced indicators also point to a rebound in manufacturing activity. The manufacturing PMI was 52.7 in December, a significant acceleration compared with 51.2 in November. A moderate recovery in car sales continued in both India and China. Indian car sales were close to the previous year's level in November, at 264 000. While car sales in China remain below year-ago levels, the y-o-y difference is easing: sales declined by 5% y-o-y in November compared with a drop of 14% in 1H19.

The economic environment remains weak in Japan and Korea. Japanese manufacturing activity shrank in December, while the manufacturing PMI was down to 48.4, a three-year low. By contrast, Korea manufacturing returned to slow growth in December (PMI at 50.1) after seven months of contraction. Korean exports fell at a slower rate on better Chinese demand. Economic activity should stabilise with the help of stimulus packages. Japan announced \$121 bn of public spending focused on infrastructure, new technologies and the repair of typhoon damage. Korea is also increasing public spending to record levels.

Many European economies remain fragile. Growth in Germany remains subdued and manufacturing orders fell by 1.3% in November compared with the previous month. Falling world investment demand and the ongoing crisis in the automotive industry are key factors.

The prices used in our projections have been revised higher. We used the Brent forward curve as of January 8, in order to avoid the temporary volatility triggered by US/Iran tensions. As a result, our average Brent price assumption for 2020 is \$63.5/bbl, compared with \$59.5/bbl last month.

OECD

OECD Demand based on Adjusted Preliminary Submissions - November 19														
(million barrels per day)														
	Gasoline		Jet/Kerosene		Diesel		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas	11.07	-0.3	2.11	2.3	4.90	-0.4	4.01	3.0	0.62	2.8	3.36	3.3	26.08	0.9
US*	9.36	0.0	1.84	2.5	4.15	0.0	3.14	0.6	0.45	3.0	2.31	3.9	21.25	0.8
Canada	0.92	-0.9	0.16	4.3	0.26	0.6	0.42	16.9	0.05	-6.0	0.79	1.6	2.61	2.8
Mexico	0.71	-3.1	0.08	-4.6	0.31	-8.7	0.40	9.6	0.11	6.6	0.24	1.4	1.86	-0.6
OECD Europe	1.97	-0.9	1.43	3.4	5.17	-0.9	1.06	-3.3	0.84	1.5	3.73	2.6	14.20	0.4
Germany	0.48	-0.5	0.22	-2.0	0.81	-1.5	0.09	-6.6	0.05	-13.8	0.68	-0.6	2.32	-1.5
United Kingdom	0.30	-4.7	0.31	3.9	0.55	-2.7	0.11	-18.8	0.02	-7.6	0.29	1.4	1.58	-2.6
France	0.18	-4.6	0.16	2.4	0.70	-2.8	0.11	1.1	0.05	11.9	0.44	2.9	1.65	-0.4
Italy	0.16	3.5	0.09	5.0	0.44	-4.0	0.10	0.0	0.07	-11.5	0.35	-5.6	1.21	-3.0
Spain	0.12	0.8	0.13	0.2	0.48	-0.4	0.08	-18.1	0.15	-4.8	0.40	6.4	1.36	-0.1
OECD Asia & Oceania	1.52	-0.3	1.07	8.1	1.50	-0.8	0.80	11.0	0.44	-8.9	2.92	1.5	8.26	1.7
Japan	0.83	-0.6	0.61	10.5	0.48	-2.0	0.37	-5.0	0.26	2.3	1.30	-5.0	3.85	-1.0
Korea	0.23	0.3	0.23	9.5	0.40	-3.2	0.36	37.9	0.14	-26.5	1.32	8.6	2.69	6.3
Australia	0.33	-0.9	0.17	0.4	0.55	2.1	0.05	1.3	0.02	20.8	0.14	0.6	1.26	1.1
OECD Total	14.57	-0.4	4.62	4.0	11.58	-0.7	5.88	2.8	1.90	-0.7	10.00	2.5	48.55	0.9

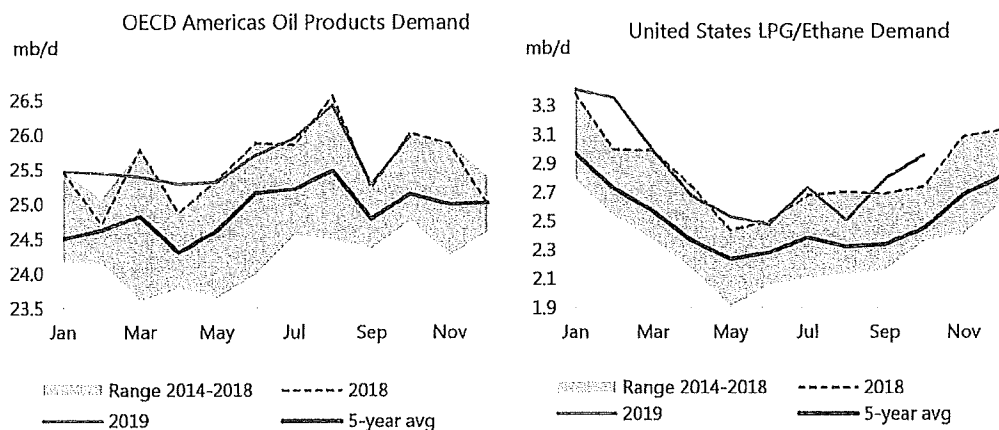
* Including US territories

OECD oil consumption fell for the sixth straight month in October, by 425 kb/d y-o-y, to reach 47.8 mb/d. The largest decreases were seen in Japan (-290 kb/d), France (-140 kb/d), Canada (-75 kb/d), the UK (-75 kb/d) and Italy (-55 kb/d) due to a combination of tax changes, mild weather and sluggish economic growth. Consumption fell by 305 kb/d on average in the first 10 months of the year, the largest y-o-y decrease since 2012.

We expect growth to recover sharply in November and December, contributing to a 430 kb/d y-o-y gain in 4Q19. This is due to higher petrochemical output in the US and the return to normal demand patterns in countries such as Korea and Turkey, following sluggish growth in 4Q18. We forecast OECD oil demand to decrease by 115 kb/d overall in 2019. In 2020, demand should grow by 275 kb/d, a rate comparable to 2018, but lower than in the relatively low price era of 2015-17.

OECD Americas

Oil demand in the OECD Americas fell by 45 kb/d y-o-y in October with lower gasoil and diesel deliveries and reduced naphtha use in the petrochemical sector. Gasoil/diesel sales volumes from April through October stayed below the previous year, reflecting lower manufacturing activity in North America amid slower economic growth. Sales are expected to recover slightly in November and December, but to remain under pressure in 2020. Naphtha, meanwhile, has suffered from the growing competitiveness of LPG and ethane linked to higher production in the US. This phenomenon has been repeated in other parts of the world.



In 4Q19, we expect demand in the region to grow by 220 kb/d, the most in a year, on the back of higher LPG and ethane use (+230 kb/d) and continued growth in air transportation, which will boost jet fuel demand by 65 kb/d. On the contrary, deliveries of gasoil/diesel (-65 kb/d), naphtha (-55 kb/d) and gasoline (-20 kb/d) are likely to fall. In addition, we expect the region's demand to fall by 65 kb/d in 1Q20, but to grow by 260 kb/d on average during the rest of 2020, the highest rate amongst OECD regions.

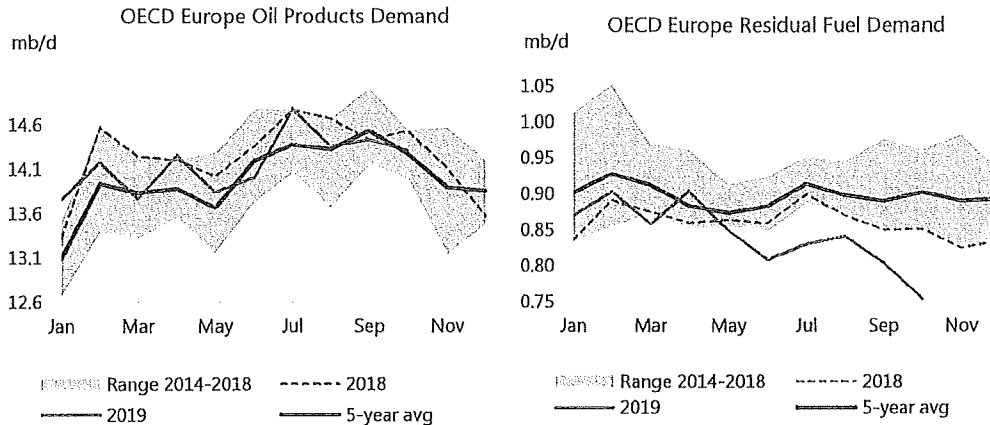
US oil deliveries grew only modestly in October, by 35 kb/d y-o-y, due to declining diesel sales (-120 kb/d) and falling naphtha demand (-130 kb/d). Demand rebounded in November, by 165 kb/d y-o-y, according to preliminary EIA data. This was the strongest annual growth rate registered since April. EIA figures showed similar growth of 160 kb/d in December. On the basis of these still provisional numbers, US demand in 2019 was essentially flat (+15 kb/d).

OECD Europe

OECD Europe oil demand fell by 220 kb/d y-o-y in October and was down 145 kb/d on average in the first ten months of the year. In October, demand fell for fuel oil (-95 kb/d), gasoil/diesel (-60 kb/d) and LPG deliveries (-85 kb/d), whereas demand for naphtha, gasoline and jet fuel/kerosene rose. Fuel oil consumption fell to just 755 kb/d in October, the lowest level in more than 12 years. In 4Q19, we believe that the region's consumption bucked the recent trend and increased by 135 kb/d y-o-y, spurred by gasoline, jet fuel and diesel.

However, this is unlikely to offset decreases earlier in the year. Oil demand is estimated to have declined by 65 kb/d for 2019 as a whole, largely due to reduced petrochemical production and lower bunker fuel oil demand. Transport fuel deliveries, by contrast, showed continued growth

in 2019. In 2020, demand is likely to increase by a modest 80 kb/d driven largely by middle distillates and, to a lesser extent, petrochemical fuels such as LPG, ethane and naphtha.



German oil demand rose by 60 kb/d y-o-y in October but fell 35 kb/d in November. Demand for LPG/ethane and naphtha stabilised following a tough 3Q19, and gasoline deliveries increased overall; however mild temperatures kept heating oil requirements subdued. Italian oil consumption stayed low in October and November, declining 55 kb/d and 40 kb/d, respectively. All fuels except gasoline and jet fuel showed declines, highlighting tough economic conditions.

French oil demand declined in both October (-140 kb/d) and November (-5 kb/d) with sharp falls in diesel and heating oil deliveries in particular. While temperatures remained above seasonal norms in 4Q19, thus keeping heating oil demand under pressure, industrial action at several refineries in December triggered some precautionary buying by consumers. In addition, public transport strikes likely boosted transport fuel demand.

Dutch oil demand fell by 35 kb/d in October, weighed down by weak petrochemical feedstocks and fuel oil deliveries. The port of Rotterdam said in early December that VLSFO's share of bunker fuel sales soared from 2% in September to 52% in November.

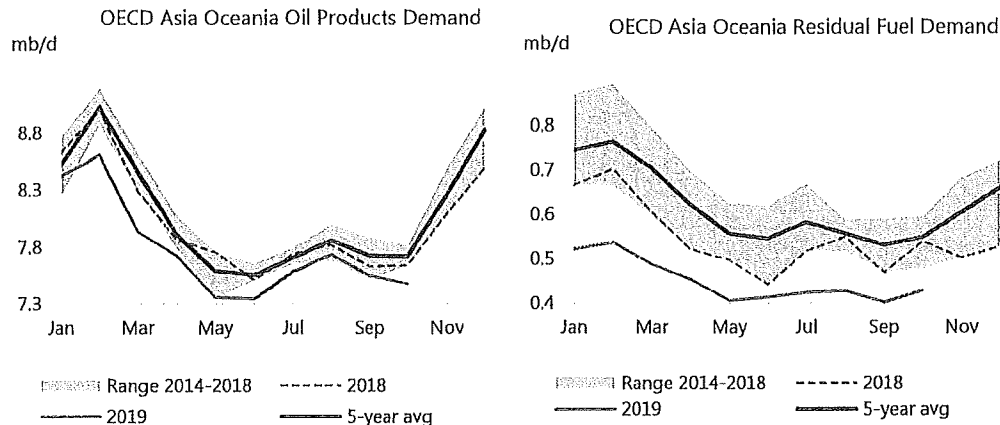
OECD Asia Oceania

OECD Asia Oceania oil demand fell 160 kb/d y-o-y to 7.5 mb/d in October, the 17th straight annual decline. Like in previous months, fuel oil (-110 kb/d) and naphtha (-140 kb/d) drove the decrease. Jet fuel/kerosene also contributed, with demand falling by 45 kb/d. Demand for transport fuels such as diesel, by contrast, rose.

We expect consumption growth to have recovered during the rest of 4Q19, largely thanks to increased utilisation in the petrochemical sector and continued momentum in middle distillates despite the warmer than normal weather recorded across the region. In 2020, demand should increase by just 15 kb/d.

Japanese oil demand fell sharply by 290 kb/d in October. This is partly due to the implementation of higher consumption taxes which had incentivised consumers to stockpile fuel in previous months and lower utilisation rate at petrochemical facilities. All major product categories showed declines, however the falls were more pronounced in naphtha (-70 kb/d) and LPG/ethane (-45 kb/d). Preliminary data for November showed a demand decline of 40 kb/d;

however this was less important than in October. Once again, petrochemical fuels declined more than other product categories, highlighting tough economic conditions as well as competition from North American, Middle Eastern and Chinese producers.



In Korea, by contrast, oil consumption rose by 150 kb/d in October and 160 kb/d in November, the largest y-o-y gains seen in more than a year. Consumers began buying oil products again following the increase of fuel taxes in August with gasoline and diesel both seen rising. The low demand base of October-November 2018 is also likely to have contributed to the y-o-y rise.

Non-OECD

Non-OECD: Demand by Region							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q19	2Q19	3Q19	2Q19	3Q19	2Q19	3Q19
Africa	4 353	4 332	4 182	86	68	2.0	1.7
Asia	27 574	28 025	27 565	779	769	2.9	2.9
FSU	4 615	4 739	4 972	126	86	2.7	1.8
Latin America	6 245	6 346	6 441	15	- 28	0.2	-0.4
Middle East	8 116	8 194	8 796	- 238	104	-2.8	1.2
Non-OECD Europe	757	791	803	46	29	6.2	3.7
Total Products	51 659	52 427	52 758	814	1 029	1.6	2.0

Non-OECD oil demand growth remained very strong in October (+1.4 mb/d) and November (+1.9 mb/d), helped by the Asia Pacific region. Chinese apparent demand rose by 825 kb/d y-o-y in November and Indian consumption expanded by 535 kb/d. Other countries in the Middle East and Latin America also posted robust growth. Saudi Arabian oil demand rose by 290 kb/d y-o-y in October and demand gained 50 kb/d in Brazil in November after growth of 125 kb/d in October. Total non-OECD demand is estimated to have increased by 1.5 mb/d in 4Q19, higher than the 1 mb/d registered in 3Q19. We expect non-OECD growth of 920 kb/d in 2020.

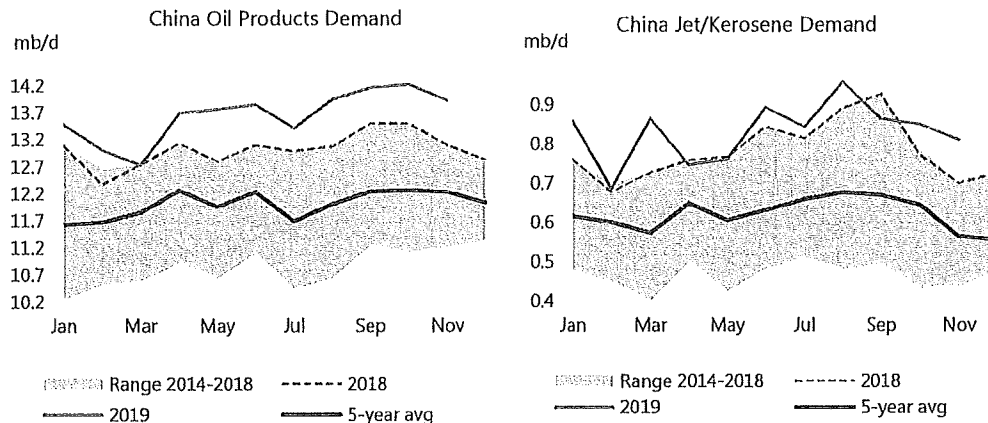
China

China's oil demand growth accelerated further in November. Refinery runs were close to record levels. This more than offset record high net product exports (close to 560 kb/d) and pushed up

Oil Market Report

Demand

apparent demand 825 kb/d above the previous year. Gasoil/diesel demand rose by 290 kb/d, supported by rising industrial production and jet/kerosene was up 110 kb/d y-o-y. China's domestic air traffic rose by 5.3% y-o-y in the same month, according to IATA data, after growth of 5.9% in October. We estimate apparent demand from refinery runs and net product trade.



However, gasoline consumption increased by only 15 kb/d. China has reportedly suspended its plan to introduce a 10% ethanol gasoline blend this year due to a sharp decline in the corn stock and limited ethanol production capacity. The US was expected to increase its exports of ethanol to China with the implementation of the phase 1 trade agreement (see *Fundamentals*). China is encouraging the switch to a new 0.5% very low sulphur fuel oil in the bunker market. It announced a tax waiver for cleaner international bunkers. Refiners will supply the new VLSFO to bonded storage sites along the coast.

China: Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2018	2019	2020	2019	2020	2019	2020
LPG & Ethane	1 620	1 716	1 788	96	72	5.9	4.2
Naphtha	1 268	1 303	1 409	35	107	2.8	8.2
Motor Gasoline	2 984	3 112	3 183	127	72	4.3	2.3
Jet Fuel & Kerosene	812	858	916	46	58	5.6	6.7
Gas/Diesel Oil	3 355	3 553	3 673	197	121	5.9	3.4
Residual Fuel Oil	432	393	385	- 39	- 8	-9.0	-2.0
Other Products	2 503	2 674	2 692	170	18	6.8	0.7
Total Products	12 975	13 607	14 046	632	439	4.9	3.2

Overall, in the January-November period, demand in China rose 615 kb/d y-o-y, driven largely by transport fuels and petrochemical demand. We forecast China's oil consumption to rise by 785 kb/d in 4Q19. In 2020, we forecast growth to slow down to 440 kb/d.

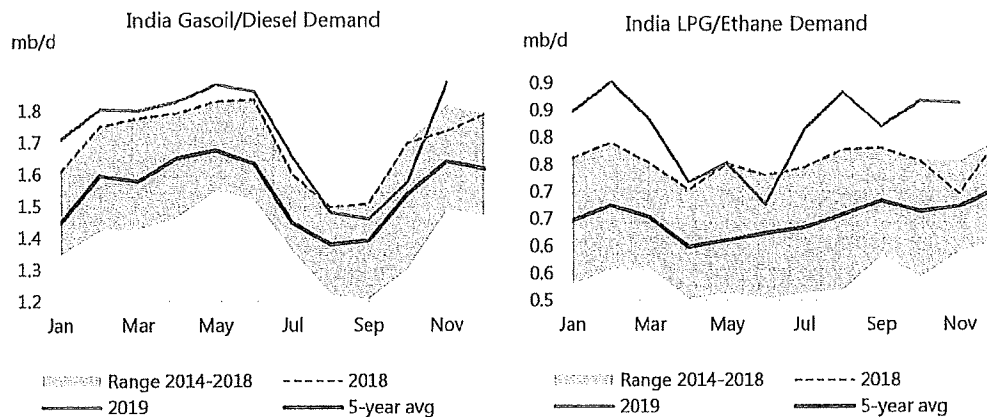
India

India's oil consumption rose by an impressive 535 kb/d in November with the ending of record monsoon rains, which hit demand for transport fuels. Low deliveries in November 2018 also inflated the y-o-y comparison. Gasoline consumption grew 60 kb/d, in line with the pace seen since the start of the year, while jet fuel and kerosene consumption declined 15 kb/d. Household

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Demand

kerosene dropped by 25 kb/d, more than offsetting an increase of 10 kb/d in jet fuel demand. Indeed, domestic passenger air traffic rose 11.3% y-o-y in November after 4.2% in October, according to IATA data. Growth had slowed sharply at the end of 2018.



Kerosene deliveries were pushed down by the penetration of LPG, which rose by a significant 165 kb/d in November. We estimate that, overall, India's oil demand rose by 220 kb/d in 4Q19. Oil demand growth in 2020 is likely to be higher than in 2019 (170 kb/d vs. 155 kb/d) but it will remain below the 200 kb/d+ levels reached in 2015-18.

India: Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2018	2019	2020	2019	2020	2019	2020
LPG & Ethane	782	850	881	67	31	8.6	3.7
Naphtha	324	316	329	- 8	13	-2.6	4.2
Motor Gasoline	676	735	761	59	26	8.7	3.6
Jet Fuel & Kerosene	252	237	254	- 15	17	-5.9	7.0
Gas/Diesel Oil	1 728	1 756	1 790	28	34	1.6	1.9
Residual Fuel Oil	150	143	144	- 7	0	-4.5	0.1
Other Products	949	980	1 028	31	48	3.3	4.9
Total Products	4 863	5 017	5 186	154	169	3.2	3.4

Other Non-OECD

Oil demand in Saudi Arabia gained 290 kb/d y-o-y in October, the third straight month of very strong annual growth following the 75 kb/d decline seen in the first half of 2019. The largest growth was seen in other products (+200 kb/d), reflecting a strong increase in direct crude use. This increase, likely to be temporary, may reflect disruptions in natural gas or fuel oil supplies after the September attacks on Saudi facilities. We forecast total demand to rise by 45 kb/d in 2019 and to fall by a similar 50 kb/d in 2020, as power generators replace crude with natural gas.

In Russia, oil consumption increased by 65 kb/d y-o-y in November, driven by petrochemical demand supporting LPG/ethane (+80 kb/d) and gasoil (+30 kb/d). Demand growth has been revised down to 85 kb/d in the first eleven months of 2019. For the year as whole demand is thought to have grown by 80 kb/d and a further 45 kb/d is expected in 2020.

Brazilian oil demand increased 50 kb/d in November, thanks to gains in gasoline. Demand is expected to increase by 75 kb/d in 2019, the strongest pace since 2014. For 2020, we forecast slower growth of 25 kb/d.

Singaporean bunker deliveries rose by 100 kb/d m-o-m in November. Deliveries of the new bunker VLSFO rose from 40 kb/d in September to 355 kb/d in November, while bunker HSFO deliveries declined from 720 kb/d in September to 410 kb/d in November. Marine gasoil bunker deliveries rose from 85 kb/d in September to 105 kb/d in November. VLSFO now accounts for 46% of bunker fuel oil sales in Singapore.

Non-OECD: Demand by Product							
(thousand barrels per day)							
	Demand		Annual Chg (kb/d)		Annual Chg (%)		
	1Q19	2Q19	3Q19	2Q19	3Q19	2Q19	3Q19
LPG & Ethane	6 946	6 788	7 007	7	238	0.1	3.5
Naphtha	3 274	3 090	3 147	- 57	12	-1.8	0.4
Motor Gasoline	11 682	11 865	11 946	505	239	4.4	2.0
Jet Fuel & Kerosene	3 490	3 401	3 570	1	22	0.0	0.6
Gas/Diesel Oil	14 615	15 452	15 325	403	550	2.7	3.7
Residual Fuel Oil	4 541	4 520	4 520	- 213	- 177	-4.5	-3.8
Other Products	7 111	7 311	7 244	170	145	2.4	2.0
Total Products	51 659	52 427	52 758	814	1 029	1.6	2.0

Box 1. IMO switch in the making

Since 1 January 2020, rules applied by the International Maritime Organisation limit the presence of sulphur in maritime fuels to 0.5%. Most ports and vessel owners started the transition in the latter part of 2019. The largest bunker centres were ready to supply VLSFO. In Europe and the US, refiners and marine fuel suppliers have increased their offering of VLSFO and in Rotterdam the switch is well underway. In Japan, most refiners have been supplying IMO-compliant fuel since 4Q19. In Korea, SK Energy will expand its offering of VLSFO by 40 kb/d in 2Q20 with a new desulfurisation unit. Hyundai Oilbank started selling VLSFO from November 2019.

Fujairah has 11 bunker suppliers able to supply 0.5% VLSFO, eight selling 0.5% marine gasoil (MGO) and seven offering 0.1% low sulphur marine gasoil. Storage facilities have been expanded to handle IMO-compliant fuels. Fujairah's refineries can produce 3.6 mt of VLSFO per year. In China, according to S&P Global Platts, the top four state refiners will have a combined VLSFO production capacity of 18.5 mt/y in 2020. China just approved a tax waiver on VLSFO supplies to help refiners boost output of this product. In India, IOC began producing VLSFO in October 2019 and HPCL started production in early December.

Singapore, the world's largest ship fuelling port, has been supplying VLSFO to its bunker customers since September-October, part of which comes from local refineries.

Initially, tight VLSFO availability and logistical issues may have forced some ships to use MGO. However, there is now an estimated 7 to 8 million tonnes of VLSFO or components in floating storage around Singapore to help ensure supply.

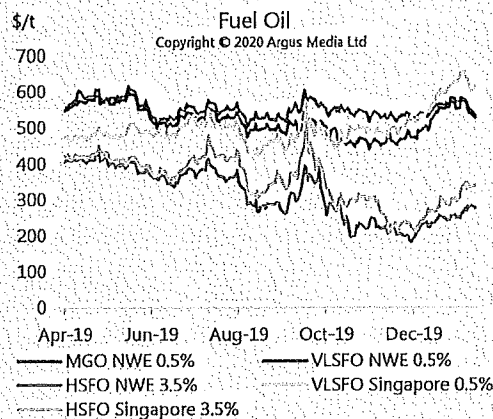
We are starting to see the first data on the transition and, it appears that deliveries of the new VLSFO bunkers are increasing fast. In Rotterdam, they rose from almost nothing in September to

Oil Market Report

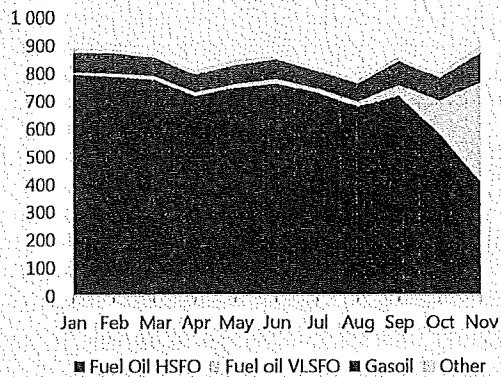
Demand

more than 20 kb/d in November and deliveries represented 51.6% of the total bunker market in November. In Singapore, deliveries of the new VLSFO rose from 40 kb/d in September to 355 kb/d in November, while in the same period bunker HSFO deliveries declined from 720 kb/d to 410 kb/d. MGO deliveries rose from 85 kb/d in September to 105 kb/d in November. VLSFO now accounts for 46% of bunker fuel oil sales in Singapore.

For the moment, vessels and bunker suppliers appear to largely prefer VLSFO to marine gasoil. Concerns regarding the quality of the new VLSFO and its compatibility with some engines are less prominent. Price data supports this view, with the spread between VLSFO and MGO prices shrinking in 4Q19. In the first two weeks of January 2020, the price differential between the two fuels was close to zero. Meanwhile, the HSFO-VLSFO spread in North West Europe and Singapore has expanded to close to \$300/t. HSFO prices have been particularly volatile in the run up to the new IMO regulations as preparations for the switch, e.g. tank cleaning, lower production, have hampered availability of the fuel. Shipbroker Gibson reported bunkering delays in many ports throughout December due to issues obtaining compliant fuel, which fed through to higher freight. In early 2020, compliant fuel availability was thought to be much less problematic.



2019 Singapore bunker demand (kb/d)



We are still in the early days of this enormous transition and we should await new data to assess its impact on fuel and gasoil demand. In addition, we do not know with certainty how the new fuels will be reported for statistical data collection purposes. VLSFO is likely to be reported as fuel oil, rather than marine gasoil, which will make tracking overall compliance more difficult, as up to now, fuel oil bunkers have reflected 3.5% and 1% sulphur material.

Supply

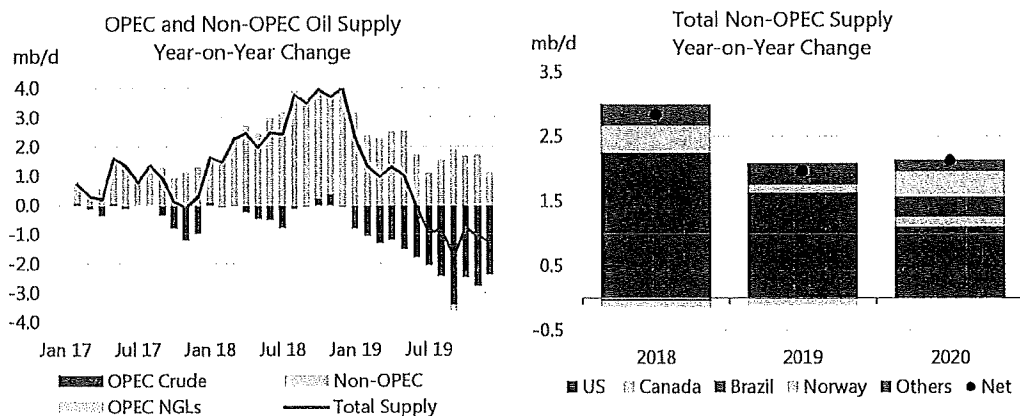
Overview

With hostilities escalating in the Middle East, 2020 has kicked off with renewed focus on oil supply security. So far there has been no disruption to flows from the region and accelerating growth in non-OPEC output along with plentiful stocks is leaving markets well supplied.

That has kept OPEC+ market management firmly on course, with deeper cuts taking effect this month. In Vienna last month, the 20 participating countries agreed a reduction of 2.1 mb/d, deepening existing curbs by 900 kb/d. That includes an extra voluntary cut of 400 kb/d from Saudi Arabia. The Kingdom was already producing below its implied January target in December and has pledged to comply fully this month and next. OPEC+ will have to cut crude oil output (excluding condensates) by 250 kb/d in January to be fully compliant with its new lower target.

Anticipated stronger growth of 2.1 mb/d from producers outside the OPEC+ pact may encourage those taking part in supply cuts to toe the line. During 2019, non-OPEC's expansion of 2 mb/d was offset by a 1.9 mb/d decline in oil production from OPEC. Iran and Venezuela between them lost nearly 1.8 mb/d, mostly due to US sanctions. OPEC+ cuts, shouldered by Saudi Arabia, also contributed.

Iran and Venezuela dominated the downside of the supply picture in 2019, while the US once again saw strong growth. This year, however, is likely to see a marked slowdown in the US expansion which changes the composition of non-OPEC growth. The US contribution slumps to 52% versus 84% on average over 2017-2019. Significant gains will come from Norway, Brazil, Canada, Australia and Guyana.



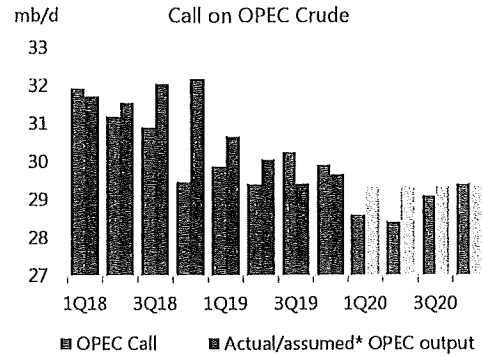
During December, global oil supply tumbled by 780 kb/d month-on-month (m-o-m) as biofuels output plunged seasonally and Saudi Arabia turned down the taps. At 100.7 mb/d, production was down 1.3 mb/d year-on-year (y-o-y).

Oil Market Report

Supply

OPEC oil supply was 2.4 mb/d lower than a year ago as Saudi Arabia withheld large volumes and Venezuela and Iran lost a combined 1.2 mb/d mostly due to sanctions. Non-OPEC production, fuelled by the US, was up 1.1 mb/d versus December 2018.

OPEC crude oil production in December was 29.44 mb/d, down 180 kb/d on the previous month, after Saudi Arabia throttled back. This level is below the group's new 2020 target even before it is officially implemented. Taking into account Saudi Arabia's voluntary cut means that the OPEC-10 bloc need to cut a further 70 kb/d from January.



*Assumes 100% compliance with new OPEC+ cut from January and Iran, Venezuela and Libya hold at December rate.

Even if they adhere strictly to the cuts, there is still likely to be a strong build in inventories during the first half of 2020. OPEC crude production would fall to 29.3 mb/d in January if there were to be full compliance and steady output from Libya, Iran and Venezuela. That is still 700 kb/d above the 1Q20 call on OPEC crude and 900 kb/d above the 2Q20 call.

OPEC / Non-OPEC Output (million barrels per day)								
	Nov 2019 Supply	Dec 2019 Supply	Supply Baseline ²	Agreed Cut	December Compliance	Average Compliance	Sustainable Production Capacity ⁶	Spare Capacity vs Dec Supply ⁸
Algeria	1.03	1.02	1.057	0.032	116%	105%	1.05	0.03
Angola	1.28	1.41	1.528	0.047	251%	268%	1.45	0.04
Congo	0.34	0.35	0.325	0.010	-250%	-161%	0.35	0.00
Ecuador ³	0.65	0.65	0.631	0.018	-119%	-31%	0.65	0.00
Equatorial Guinea	0.10	0.12	0.127	0.004	175%	453%	0.12	0.00
Gabon	0.20	0.21	0.187	0.008	-383%	-457%	0.22	0.01
Iraq	4.65	4.59	4.653	0.141	45%	-60%	4.90	0.31
Kuwait	2.71	2.71	2.609	0.085	116%	148%	2.86	0.15
Nigeria ³	1.70	1.66	1.820	0.055	307%	-24%	1.80	0.14
Saudi Arabia	9.88	9.88	10.633	0.322	296%	268%	12.00	2.32
UAE	3.10	3.07	3.168	0.098	102%	99%	3.40	0.33
Total OPEC 11	25.54	25.37	26.847	0.814	181%	150%		
Iran ⁴	2.13	2.11					3.80	-
Libya ⁴	1.16	1.14					1.17	0.03
Venezuela ⁴	0.79	0.82					0.82	0.00
Total OPEC	29.62	29.44					34.49	3.36
Azerbaijan	0.78	0.77	0.797	0.020	125%	143%		
Kazakhstan	2.00	2.01	2.028	0.040	56%	285%		
Mexico	1.65	1.97	2.017	0.040	115%	240%		
Oman	0.98	0.98	0.995	0.025	77%	66%		
Russia	11.59	11.60	11.747	0.230	66%	72%		
Others ⁷	1.26	1.26	1.221	0.028	-139%	74%		
Total Non-OPEC	18.58	18.58	18.81	0.383	59%	116%		
Total OPEC+	44.10	43.95	45.65	1.197	142%	139%		

1 OPEC figures are crude oil only, Non-OPEC figures are total oil supply (including NGLs).
 2 Based on Oct-2018, except for Azerbaijan and Kuwait based on Sept-2018 and Kazakhstan Nov-2018. Non-OPEC supply baseline for Kazakhstan and Russia use IEA estimates.
 3 Nigeria assigned new target from June 2019, Ecuador, Malaysia, Brunei from March 2019.

4 Iran, Libya, Venezuela exempt from cuts.
 5 Capacity can be reached in 90 days and sustained for extended period.
 6 Spare capacity excludes Iranian crude offline due to sanctions.
 7 Bahrain, Brunei, Malaysia, Sudan and South Sudan

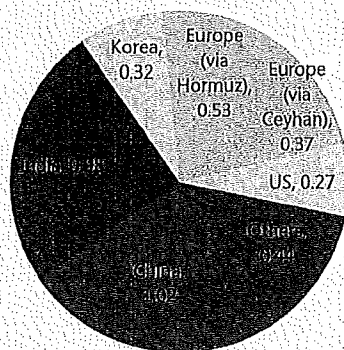
Box 2. Middle East hostilities put spotlight on supply security

Escalating tension in the Middle East has heightened concern over supply security, with Iraq and the Strait of Hormuz firmly in focus. Even before recent clashes between Iran and the US in Iraq, widespread protests had posed a threat to Iraq's oil fields and terminals. As yet there has been no material impact on operations, despite the evacuation of some foreign workers.

Iraq's importance has grown and it now ranks as OPEC's second largest producer and exporter after Saudi Arabia, shipping nearly 4 mb/d. China and India are the largest buyers at around 1 mb/d each, but customers in Europe also buy 900 kb/d of Iraq's medium sour barrels. Nearly 400 kb/d is shipped via Turkey's Ceyhan port in the Mediterranean with the remainder loaded in the Gulf. Refiners in the US consumed about 300 kb/d of Iraqi oil in 2019.

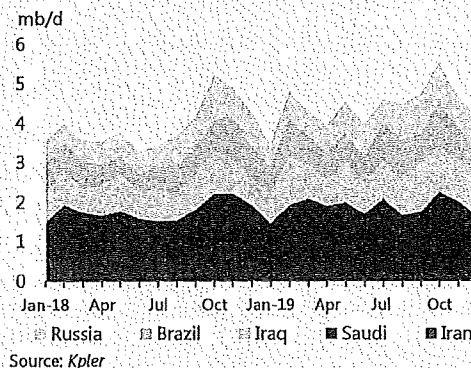
Importers, especially in Asia, are also weighing the increased risk of disruption to supplies through the strategic Strait of Hormuz. Around 20 mb/d of crude, condensates and products, or 20% of global oil supply, along with a quarter of the world's LNG exports, pass through this vital waterway. If there were to be a serious incident, only Saudi Arabia, the UAE and Iraq have functional bypass pipelines to move some of their export flows to terminals outside the Gulf.

Iraq's Key 2019 Crude Buyers (mb/d)



Source: Kpler

Selected Seaborne Flows to China



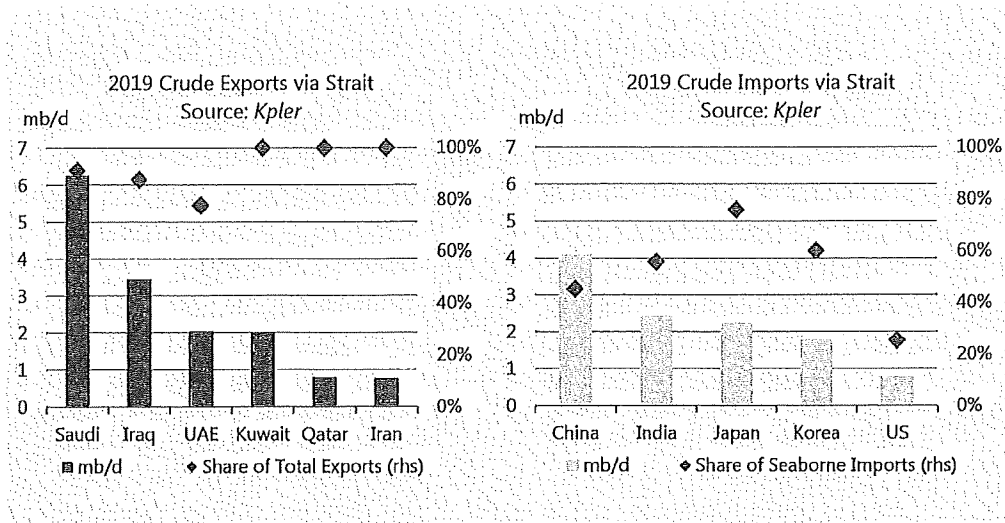
Source: Kpler

Crude oil exports during 2019 were around 15 mb/d compared with 17 mb/d the previous year after US sanctions cut loadings of Iranian crude and condensate by 1.4 mb/d to an average 0.8 mb/d in 2019 and the OPEC+ pact led to lower flows. Saudi Arabia dominates exports through the Strait and shipped around 90% of its crude exports via the transit route in 2019. The UAE moved roughly 70% of its crude via the Strait.

China buys by far the most crude that passes through the Strait of Hormuz. Last year Saudi Arabia boosted sales to China by 500 kb/d, while Iraq routed nearly 200 kb/d more. Japan, however, is the most dependent on supplies that transit the Strait. Around 800 kb/d of the US' seaborne imports are shipped via Hormuz. Importers in Asia have been able to ease their reliance on the Gulf thanks to greater availability of supply from Brazil, the US, Mexico and others. China, for example, increased its purchases from Brazil by more than 100 kb/d in 2019, while India bought 100 kb/d more from the US.

Oil Market Report

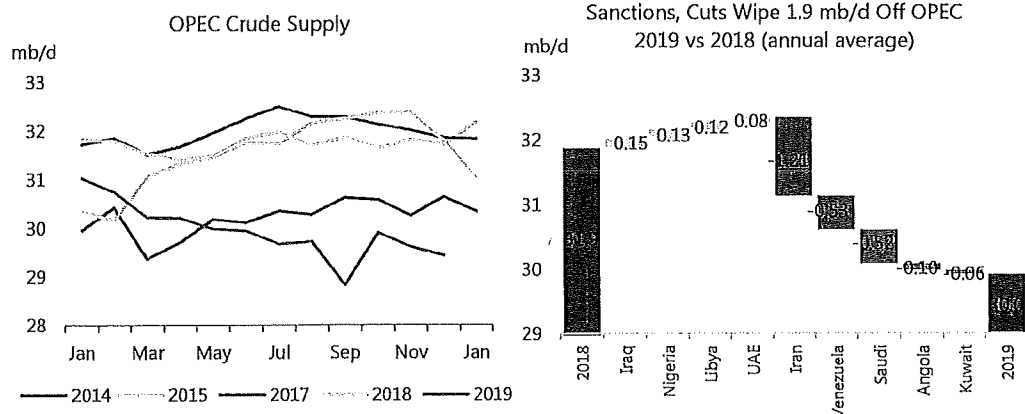
Supply



OPEC crude oil supply

OPEC crude output fell in December after Saudi Arabia pumped less ahead of deeper OPEC+ cuts that took effect in January. At 29.44 mb/d, production from the 14 members declined 180 kb/d m-o-m and was down 2.4 mb/d y-o-y. Ecuador, which produced 550 kb/d in December, was due to withdraw from OPEC in January.

Iraq, whose compliance has been the lowest among major producers, reduced output in December although it still pumped 80 kb/d above its target. It will have to cut a further 130 kb/d in January to adhere to its new, lower quota. Nigeria and the UAE posted modest declines in December. Angola, where slumping output from mature fields has seen it consistently produce far below its OPEC+ target, turned in the biggest supply increase following oil field maintenance.



The 11 members curbing supply in December pumped 660 kb/d below the bloc's target, lifting compliance with the deal to 181% versus 161% the previous month. OPEC's spare capacity stood at 3.36 mb/d in December, with Saudi Arabia holding 69%.

For 2019 as a whole, sanctions and OPEC+ cuts wiped 1.9 mb/d off OPEC supply compared to 2018. Tough US sanctions cut Iran's crude production by an average 1.2 mb/d to 2.36 mb/d, the lowest annual rate since 1988. Venezuelan supply, hit by sanctions, chronic mismanagement and underinvestment fell to an average 870 kb/d. For two years running, Venezuelan output has fallen by more than 0.5 mb/d. Saudi Arabia's strong over-compliance on OPEC+ cuts saw the Kingdom's production drop 0.5 mb/d compared to 2018. Iraq, however, saw record annual production of 4.7 mb/d as it largely flouted its OPEC+ target.

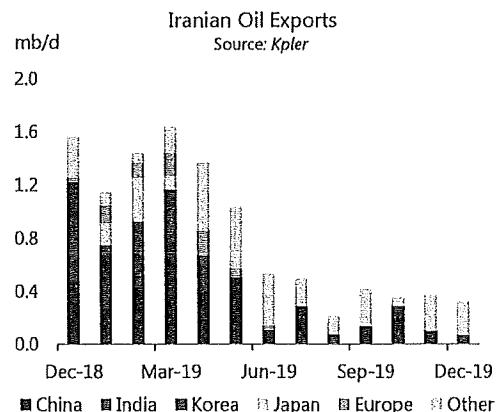
Saudi Arabia turned in the largest m-o-m decrease in December, with output declining 200 kb/d and exports falling sharply. Production of 9.68 mb/d, 630 kb/d below its OPEC+ quota, was even below its self-imposed 1Q20 target of 9.74 mb/d that is conditional on other members' compliance.

At the end of 2019, the Kingdom and neighbouring Kuwait struck an agreement to restart output in the shared 500 kb/d Neutral Zone that has been shut for more than four years (and excluded from our *capacity* estimates) due to a dispute. The return of production is expected to be gradual and material volumes are not expected until later in 2020, at the earliest. Production in Kuwait held steady at 2.71 mb/d during December while supply from the UAE dipped to 3.07 mb/d.

Crude oil supply in Iraq, including the Kurdistan Regional Government (KRG), fell 60 kb/d in December to 4.59 mb/d, down 180 kb/d on the previous year. Amid reciprocal military strikes between the US and Iran, Iraq's oil sector operated as normal although some foreigners were evacuated from the ExxonMobil-operated West Qurna-1 field, the only giant field in the country that is operated by a US company.

While US/Iran tensions could deter future spending by western firms, the biggest immediate threat to Iraqi output could be nationwide protests that began in October. So far, small-scale outages have not affected overall supply. Demonstrations have targeted oil fields such as the 80 kb/d Nasiriya in the south that was briefly shut in. Protests at the port of Khor al-Zubair led to the shut in of 30 kb/d of output from the Qayara oil field that is trucked from Nineveh province to Basra.

Crude output in neighbouring Iran, hit hard by US sanctions, is hovering around the 2.1 mb/d level. Visible oil exports are around 300 kb/d, a level that has been sustained for several months. Shipments are running around 2.5 mb/d lower than before Washington withdrew from the JCPOA. At the end of December, the National Iranian Oil Co was holding crude and condensate on 28 VLCCs (two more than the previous month) and three Suezmax tankers, according to *EA Gibson* data.



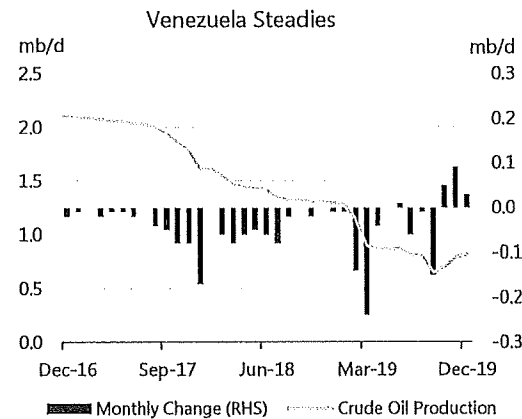
Output in Angola rose 130 kb/d in December to 1.41 mb/d, revived by maintenance at the Girassol oil field the previous month. Angola is striving to at least stabilise production, which slumped to 1.39 mb/d in 2019 from a peak of 1.83 mb/d in 2008 as a number of oil fields have passed their prime. To drum up foreign investment, the government sweetened commercial terms for some of its oil contracts. Seeking to expand its presence in the deep offshore, Total

has secured a deal for two blocks in the Kwanza Basin. Four discoveries - Cameia, Mavinga, Bicular and Golfinho – have been made so far.

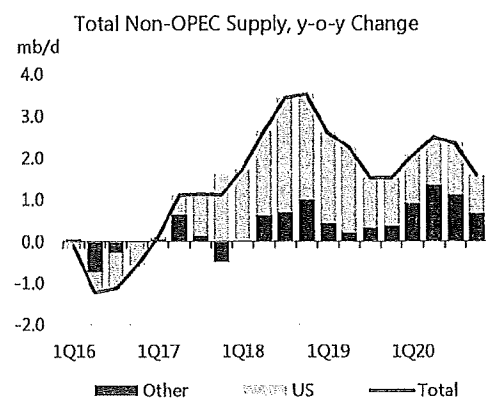
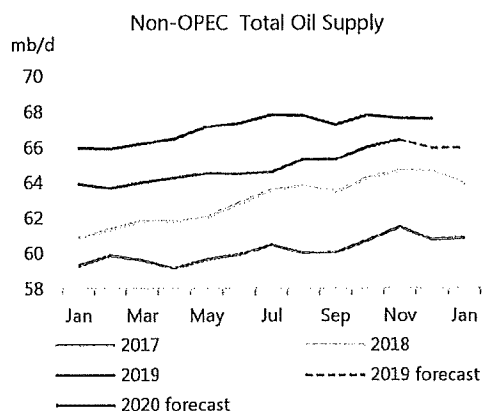
Libya's oil production eased 20 kb/d to 1.14 mb/d in December after air strikes briefly disrupted operations at the El Feel oil field. The southwestern field has capacity of 130 kb/d but has been pumping around 70 kb/d. Libya is in the grip of civil unrest that pits the UN-backed Government of National Accord against the Libyan National Army (LNA). Crude from El Feel and the nearby 300 kb/d El Sharara is routed to the Zawiya refinery and export terminal on the west coast. Despite the civil unrest, production has risen and exports have been broadly stable as crucial infrastructure remains under the control of the LNA.

Algeria appointed a new government at the start of January as it confronts a political crisis and economic problems caused by declining oil and gas revenues. Production during December inched down to 1.02 mb/d. President Abdelmadjid Tebboune, elected in December, kept Energy Minister Mohamed Arkab in his post, signalling stability in the oil and gas sector. The country's new energy law, which features improved commercial terms and tax rates to attract foreign investment, has also come into effect. Oil production has been on the decline for years and averaged 1.02 mb/d in 2019, the lowest since 2002. Production in Nigeria slid 40 kb/d to 1.66 mb/d in December, but was up 40 kb/d y-o-y.

Venezuela saw output bump up to 820 kb/d in December. Exports rose, supported by stock draws. The Petropiar facility, a joint venture between Petroleos de Venezuela and Chevron Corp, is operating again as a crude upgrader after several months working as a less complex blending facility.



Non-OPEC supply

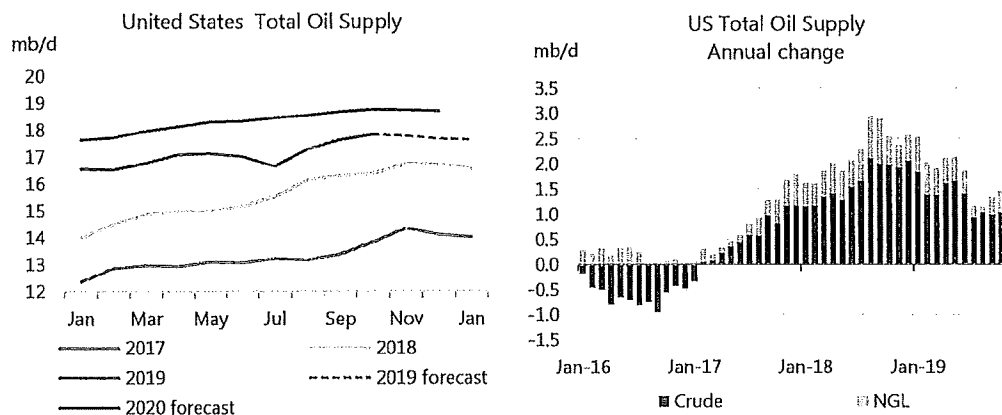


Non-OPEC oil supply plunged by 600 kb/d in December as global biofuels production dropped seasonally and with m-o-m declines estimated for the US and Canada. At 65.8 mb/d, non-OPEC output was 1.1 mb/d higher than a year earlier, a sharp deceleration from the record pace of growth seen during 2H18. Even so, 4Q19 non-OPEC supply growth of 1.5 mb/d, was higher than expected, led by the US and Brazil.

Those two producers, along with Norway, will underpin non-OPEC's expansion in 2020, contributing 1.1 mb/d, 310 kb/d and 390 kb/d, respectively. Gains are also expected from Canada, as mandatory production curtailments are scaled back. Further increases will come from Guyana, which started up production in December, and Australia. In all, non-OPEC output is set to rise by 2.1 mb/d compared with 2 mb/d in 2019.

Non-OPEC Supply (million barrels per day)											
	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Americas	23.03	24.05	24.52	24.64	25.31	24.63	25.51	25.81	26.05	26.37	25.94
Europe	3.46	3.47	3.17	3.16	3.51	3.33	3.75	3.76	3.69	3.88	3.77
Asia Oceania	0.41	0.43	0.48	0.51	0.56	0.50	0.57	0.58	0.59	0.59	0.58
Total OECD	26.9	28.0	28.2	28.3	29.4	28.5	29.8	30.2	30.3	30.8	30.3
Former USSR	14.56	14.81	14.42	14.62	14.88	14.63	14.63	14.57	14.59	14.62	14.60
Europe	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11
China	3.81	3.88	3.91	3.88	3.87	3.88	3.86	3.89	3.86	3.88	3.87
Other Asia	3.36	3.33	3.24	3.09	3.18	3.21	3.16	3.13	3.10	3.07	3.11
Latin America	4.52	4.51	4.58	4.85	5.02	4.74	4.96	5.06	5.16	5.20	5.10
Middle East	3.26	3.25	3.24	3.24	3.24	3.24	3.26	3.25	3.25	3.24	3.25
Africa	1.45	1.48	1.49	1.46	1.47	1.47	1.45	1.44	1.42	1.41	1.43
Total Non-OECD	31.1	31.4	31.0	31.3	31.6	31.3	31.4	31.4	31.5	31.5	31.5
Processing Gains	2.32	2.35	2.35	2.35	2.35	2.35	2.38	2.38	2.38	2.38	2.38
Global Biofuels	2.63	2.25	2.95	3.21	2.72	2.79	2.36	2.99	3.28	2.88	2.88
Total Non-OPEC	62.9	63.9	64.5	65.1	66.0	64.9	66.0	67.0	67.5	67.6	67.0
Annual Chg (mb/d)	2.83	2.60	2.25	1.51	1.52	1.97	2.09	2.50	2.36	1.60	2.13
Changes from last OMR (mb/d)	0.00	0.04	0.05	0.03	0.15	0.06	0.04	0.06	0.03	0.16	0.07

US crude and condensate production rose by a stronger-than-expected 170 kb/d in October, to 12.7 mb/d. Gains were seen in North Dakota (+71 kb/d), Texas (+55 kb/d), Colorado (+40 kb/d) and Alaska (+25 kb/d), while New Mexico was flat and Oklahoma declined slightly (-12 kb/d).



Gulf of Mexico production held steady at around 1.9 mb/d in October, but 150 kb/d higher than a year ago when tropical storms forced platforms to close. Increased supply also came from

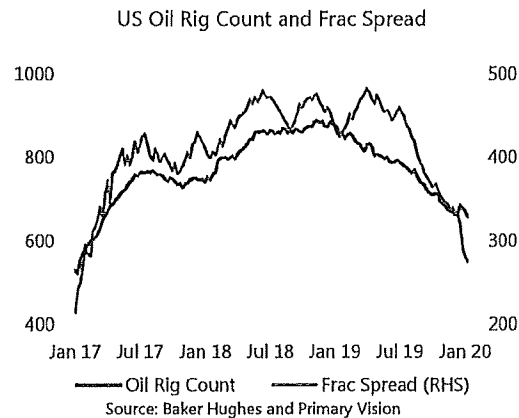
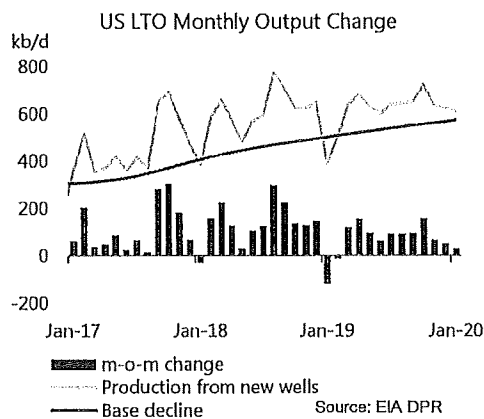
Chevron's Big Foot project that started up in November 2018 and Shell's Appomattox field that was launched last May. Further gains are expected as these two projects ramp up towards name plate capacity of 75 kb/d and 175 kb/d, from 25 kb/d and 31 kb/d, respectively.

Total oil supply was up 1.45 mb/d on a year earlier, of which crude accounted for 1 mb/d and NGLs from processing plants 435 kb/d. Gains continue to be led by the Permian which straddles Texas and New Mexico. Even so, Texas production gains slowed to 550 kb/d y-o-y, the lowest in two years. New Mexico production was up 210 kb/d on a year ago – a 16-month low for growth.

A further slowdown in growth is expected for 2020 as budget cuts and steep declines from producing wells take their toll. Following spending cuts of 8% in 2019, investments in tight oil are expected to contract by another 8% in 2020. The drop in spending has already led to a sharp reduction in the number of rigs and well completions dropped sharply towards the end of 2019. Producers removed 208 oil rigs from operations in 2019 and a further 18 rigs were laid off in early 2020. Moreover, by year-end the frac spread count fell below 300 for the first time since February 2017, with the Permian down 25% over 4Q19.

Declines from existing wells are also deepening. According to the Energy Information Administration's Drilling Productivity Report, the base decline from existing wells was nearly 600 kb/d by end-year 2019. Even so, improved productivity and longer laterals mean that more wells are drilled with fewer rigs and output per well continues to improve. As such, production is still rising. According to Rystad Energy, roughly 950 new horizontal wells are needed per month to offset base decline, down from 1 050 wells in mid-2019.

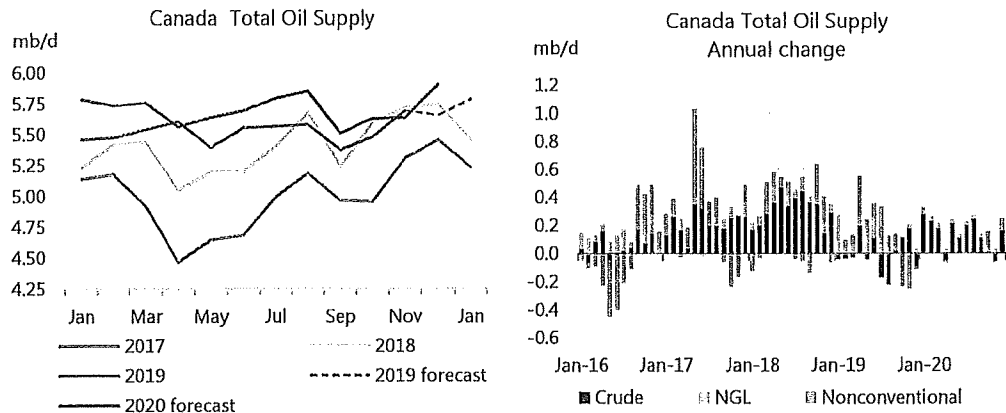
Despite a slowing rate of growth, the US will be the largest contributor to non-OPEC supply growth in 2020. Production is expected to increase by 1.1 mb/d overall, of which crude and condensates account for 760 kb/d.



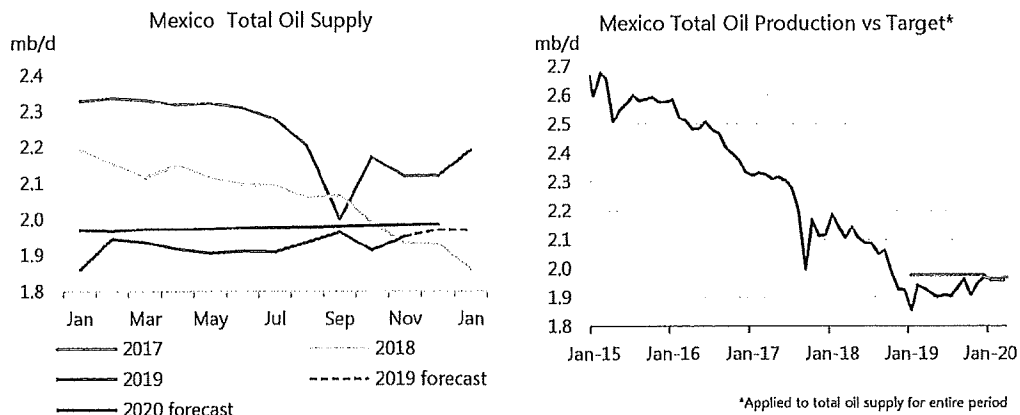
Canadian oil supply rose by a further 200 kb/d in November, to 5.7 mb/d, nearing last year's record highs. Most of the gain came from Alberta's upgraders, which reduced output in September and October due to maintenance. Non-upgraded bitumen volumes held largely steady at 1.96 mb/d. At 3.6 mb/d, Albertan oil production subject to output restraints was 185 kb/d below the allowed level of 3.8 mb/d for November.

Output is estimated to have dropped again in December, by 70 kb/d, on continued takeaway capacity constraints and operational problems at an upgrader. In November, Albertan oil inventories reached their highest level since April after TC Energy's 590 kb/d Keystone pipeline

shut following an October leak and as a strike by Canadian National restricted rail exports. While the rail strike was resolved, Keystone continued to run at reduced capacity in early January according to the pipeline company. In addition, Syncrude's 360 kb/d upgrader reduced its December production by 50 kb/d due to operational problems.



Mexican total oil production rose by 40 kb/d m-o-m in November, to 1.95 mb/d, posting its first annual gain in more than a year (+20 kb/d). The increase came primarily from the Ku-Maloob-Zaap (KMZ) complex (+30 kb/d), as maintenance had hampered output a month earlier. Production from KMZ, which is the largest producer in Mexico, was nevertheless 20 kb/d below a year earlier. Output at the Xanab field, which had seen a precipitous decline from more than 170 kb/d in 2017 to a low of only 30 kb/d at the start of 2019, inched up by a further 4 kb/d to 75 kb/d (+30 kb/d y-o-y) as new wells were connected. Annual gains also stemmed from Ayatsil (+20 kb/d) and Onel (+19 kb/d) as Pemex stepped up efforts to stem declines. Further gains could be seen in December as several of Pemex's priority fields came on line.



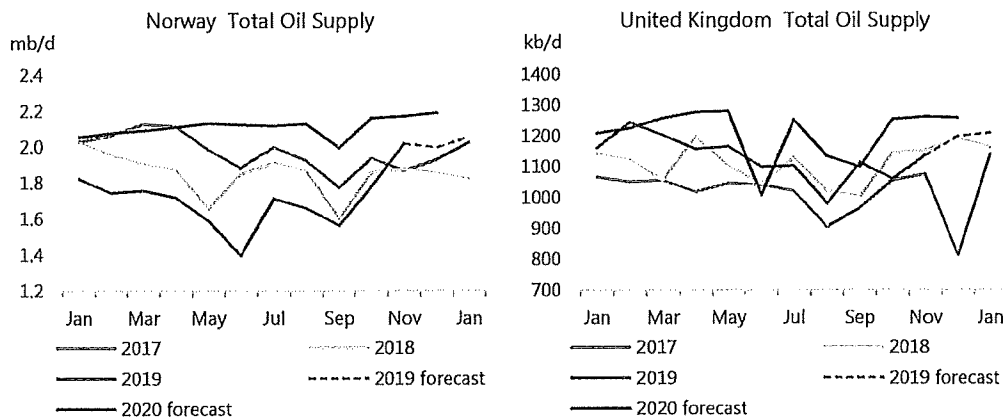
Mexico, which had agreed to cut production by 40 kb/d from an October 2018 baseline, pledged to reduce output by an additional 18 kb/d from January. December production was estimated 32 kb/d above the new target - now referring to crude oil only. Even so, in 2020 Mexico is expected to post its first annual production gain in more than a decade, of 50 kb/d.

North Sea oil supply rose to 3.3 mb/d in December, the highest since January 2018. Flows have been boosted by Norway's Johan Sverdrup since production started in October and the return

of disrupted UK supplies also contributed. Meanwhile, Denmark's output has fallen by 25% since mid-2019, to 80 kb/d in December. Along with field declines and a dearth of new projects, Total has closed the Tyra platform for restoration works that are expected to take two years. This has shut-in fields that produced around 25 kb/d in 1H19.

Official data from the Norwegian Petroleum Directorate showed that in November total oil supplies exceeded 2 mb/d, up 140 kb/d y-o-y. In early December, Equinor announced that the Johan Sverdrup field had already reached production of 350 kb/d meaning that it accounts for almost 20% of Norwegian output only three months after first oil. When Phase 2 of the development reaches its expected plateau of 660 kb/d in 2022 it could represent 30% of Norway's output. Phase 1 will continue to ramp up in the first half of 2020, albeit at a slower pace. In mid-December Aker BP started-up the Valhall Western Flank satellite field, announcing that the project had been delivered "ahead of schedule and within budget". At plateau, around 50 kb/d of crude is expected to be delivered from nine wells tied into an unmanned wellhead platform.

Vaer Energi submitted its development plan for the extension of production from the Balder and Ringhorne fields to 2045. If approved by the authorities, this could eventually add around 35 kb/d to output. Equinor announced that it had approved plans to extend the Statfjord field's production lifetime towards 2040. The project includes the deferral of the decommissioning of the three Statfjord platforms that had originally been planned to begin in 2022. There has been production from the Statfjord field since 1979, and output peaked at over 700 kb/d in the early 90s but has since dwindled to less than 10 kb/d. Currently liquids from more than 10 other fields are produced via Statfjord infrastructure, the largest of which is Gullfaks.



Production in the UK rebounded by 75 kb/d m-o-m in November to 1.1 mb/d largely due to the return to normal operations at Buzzard, UK's largest field, that was shut in for most of October. In 2019, the UK saw only modest growth of 25 kb/d, with Equinor's Mariner project the only significant start-up. Mariner is a large contributor to 2020's expected growth of 75 kb/d but gains are also anticipated from the West of Shetland's Schiehallion field that started up in 2017. BP-operated Schiehallion underperformed expectations in 2019 and it remains to be seen if the expected plateau of 120 kb/d will be achieved in 2020. CNOOC said that Buzzard Phase 2 would be online in 2H20, rather than 2021, helping to stabilise production from the field that has seen average annual declines of 10% in the past four years. BP announced further North Sea asset sales and Premier Oil looks set to take its interests in the Andrew oil facilities and Shearwater hub, allowing it to focus on core growth areas including its West of Shetlands and ETAP assets.

Chinese crude oil production rose by 25 kb/d m-o-m and 40 kb/d y-o-y in November, to 3.76 mb/d. For 2019 as a whole, supply looks on track to post an annual gain of 55 kb/d, reversing declines in place since 2016. According to the National Energy Administration (NEA), investment in the upstream sector rose by 22% last year, as companies stepped up efforts to raise domestic oil and gas output in a bid to ensure energy security. New proven reserves for oil and natural gas were 1.2 billion tonnes and 1.4 trillion cubic meters respectively in 2019, rising 25% and 68% year on year.

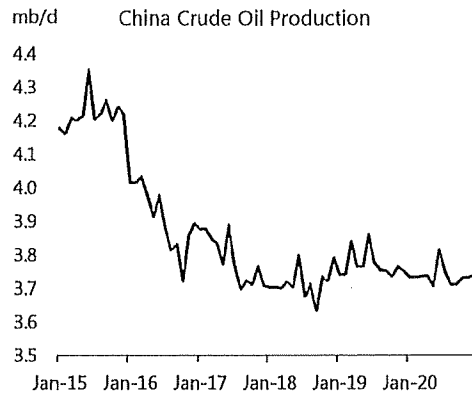
In 2020, the NEA says China will "continue to vigorously press ahead with oil and gas exploration and development and consolidate the sound momentum of oil and gas output growth in 2020". To further improve oil and gas production capacity, exploration efforts will be focused on four major oil and gas production bases, namely Bohai Bay, Sichuan, Xinjiang and Ordos Basin.

Furthermore, Beijing announced in early January that China will open up its industry and for the first time allow foreign companies to explore for and produce oil and gas. From 1 May, foreign firms registered in China with net assets of 300 million yuan (\$43 million) will be able to take part in oil and gas exploration and production. The change will also apply to domestic companies that meet the same condition. Previously, international companies could enter the industry only via joint ventures or cooperation with Chinese firms, mainly the state-owned majors China National Petroleum Company (CNPC), China Petrochemical Corp (Sinopec) or their listed vehicles. As part of the reform, all mineral resource licences are to be awarded by competitive bidding and tenders, except for rare earths and radioactive minerals, where licences will still be strictly controlled.

Brazilian oil supply surged to a new record high in November, of 3.2 mb/d, for a record y-o-y increase of 515 kb/d. Annual gains came from the Búzios field, where four floating production, storage and offloading vessels (FPSOs) produced 440 kb/d, up from 80 kb/d a year ago. Production at the largest field, Lula, also rose strongly (+220 kb/d), as the P-69 FPSO reached its 150 kb/d capacity thirteen months after start up.

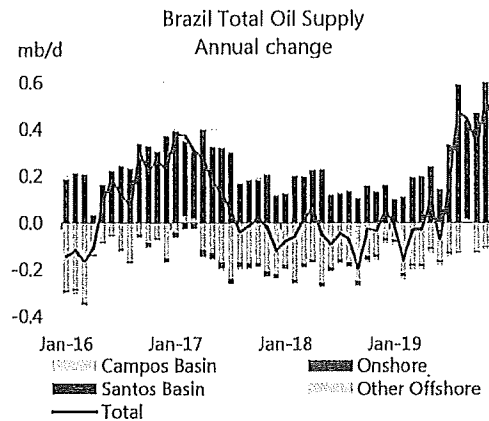
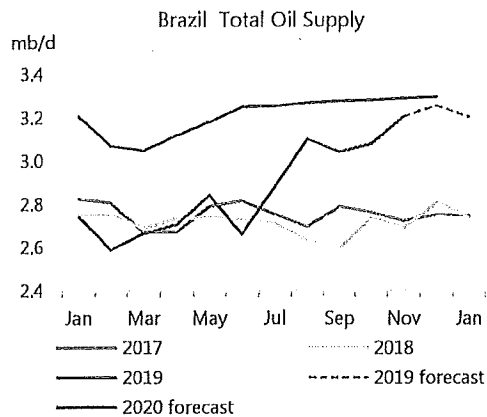
Compared with a month ago, output was up 130 kb/d led by stronger production from the Búzios field (+136 kb/d) and Lula (+45 kb/d). Production declines from the Campos basin slowed to only 13 kb/d compared with losses of 115 kb/d on average over the first 10 months of the year and 175 kb/d in 2018. The Berbigao field, which came online in November, produced 19 kb/d and should see further gains in coming months. In 2020, one additional new production system is scheduled to start up. The 150 kb/d P-70 that will be installed at the Atapu field set sail from a Chinese ship yard in early December.

Despite the continued ramp-up of new units in 2020, Petrobras warned in its latest investor update that steep declines at mature fields and heavy maintenance will crimp growth in 2020. Even so, production is expected to expand by 310 kb/d, compared with an average increase of 190 kb/d in 2019.



Oil Market Report

Supply

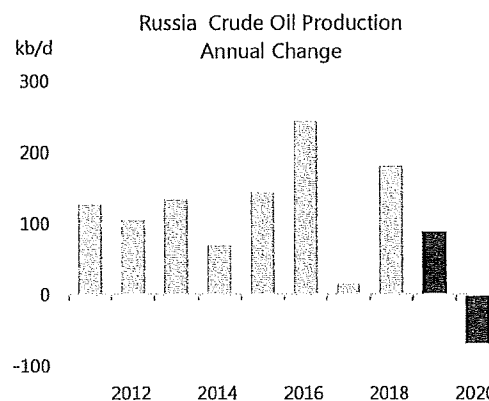
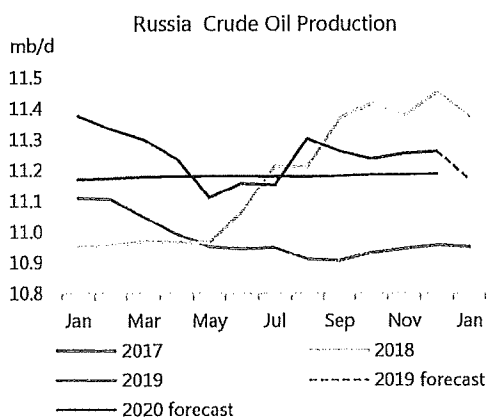


Argentina's crude oil production in November held steady from a month earlier at 514 kb/d, up from 496 kb/d a year earlier. Production has been growing since 2017, led by investments by Chevron, ExxonMobil, Shell and state-backed YPF in the Vaca Muerta shale play. A new government took office in December and has yet to provide details on its energy program, other than that it is in favour of developing Vaca Muerta.

On 21 December, ExxonMobil, Hess and CNOOC announced that the Liza field in offshore Guyana started production ahead of schedule. The Liza Phase 1 development project is located in the Stabroek block offshore Guyana and has one FPSO and 17 subsea wells. It is expected to reach its peak production of approximately 120 kb/d of crude oil in the coming months.

The discovered recoverable resources of Stabroek Block are estimated at more than 6 billion barrels of oil equivalent. At least five FPSOs are expected to be deployed in the block, which could produce more than 750 kb/d of oil by 2025 according to the consortium. Exxon, which is the operator, holds a 45% interest, while Hess has a 30% stake and CNOOC 25%.

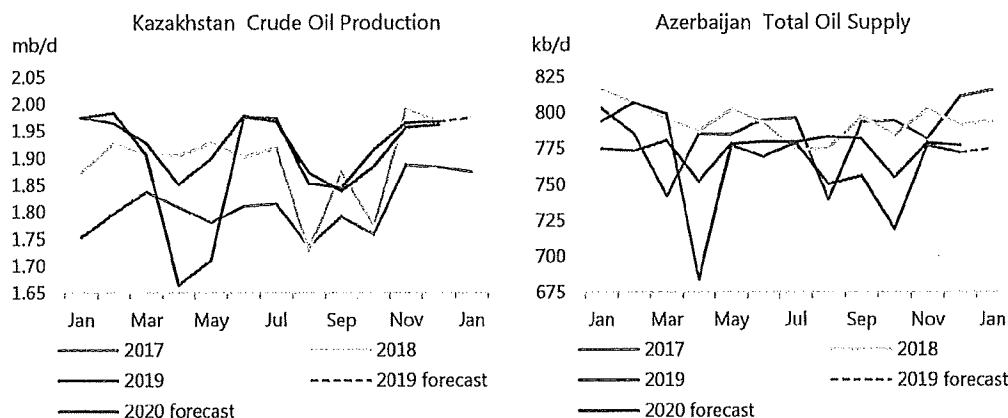
Russian crude and condensate production in December was largely unchanged from a month earlier at 11.26 mb/d. Supply was 190 kb/d below a year ago and 155 kb/d lower than in October 2018 which set the baseline for OPEC+ output cuts. Russia had pledged to reduce crude and condensate output by 230 kb/d through December 2019.



From January, Russia has agreed to cut its crude oil production by 300 kb/d from the October 2018 baseline. The new output cut and target exclude gas condensates which are combined with crude oil in official Russian oil statistics. According to Energy Minister Alexander Novak, Russia curbed its crude oil output excluding condensate by 234 kb/d in December from the October 2018 baseline. The minister said condensate production was up 58 kb/d over the same period. We estimate Russian crude oil production in December 86 kb/d higher than the new target.

Novak expects Russian oil and condensate production of between 11.12-11.32 mb/d in 2020 using a conversion rate of 7.33 barrels per tonne of oil. That compares with average production of 11.25 kb/d in 2019, a new record high. Despite the output cuts and a contamination issue that shut in supply, Russian crude and condensate production rose by 90 kb/d last year as small producers boosted output. Russian oil production has been rising for the past decade thanks to the start-up of new fields and the introduction of new technologies at mature fields. Assuming a continuation of OPEC+ market management through end-year, Russian oil supply is expected to decline by 60 kb/d in 2020.

Kazakhstan total oil production rose by 50 kb/d in November, to just over 2 mb/d led by a 105 kb/d m-o-m increase in output from Karachaganak. Kashagan production dropped by 55 kb/d, to 307 kb/d, due to unscheduled maintenance. According to preliminary daily production statistics, Kazakh oil supply was largely unchanged in December, despite a rebound in Kashagan flows. The ministry of energy said Kashagan output reached a record 400 kb/d by end-month following completion of the works. December CPC loadings rose by 50 kb/d m-o-m to nearly 1.5 mb/d, just shy of June 2019's record-high. According to IEA estimates, Kazakhstan will have to cut its crude oil supply by 45 kb/d from January to comply with new targets.



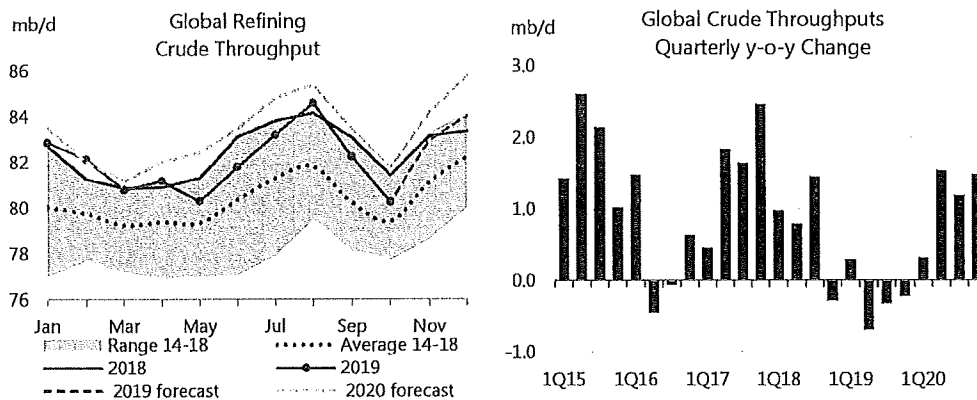
Following a 60 kb/d increase in November, Azeri oil production eased by 5 kb/d in December to 770 kb/d. Crude oil production dropped to 680 kb/d while condensate output from the Shah Deniz gas complex rose to 91 kb/d. Azerbaijan pledged to cut output by an additional 27 kb/d from January and will as such have to maintain crude oil production at 698 kb/d through 1Q20.

Production at the BP-operated Azeri-Chirag-Deepwater Gunashli complex, which accounts for roughly three-quarters of Azeri oil supply, averaged 535 kb/d in 2019, down from 585 kb/d in 2018. Capacity is expected to rise when the new Azeri Central East platform comes on line in 2023. According to S&P Global Platts, January Azeri Light crude loadings at Ceyhan, Turkey, are set to hit their lowest monthly level since records began in 2012, at 550 kb/d, and February loadings are set to be even lower, at 537 kb/d.

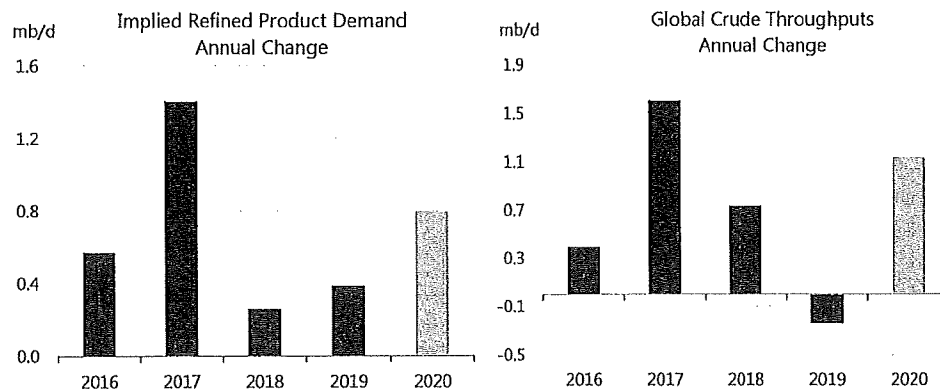
Refining

Overview

The final quarter of 2019 continues to deliver weak refining performance. For October, OECD data were finalised 430 kb/d lower than previously reported, mainly due to Canada and Mexico. Saudi Arabia, Thailand and Chinese Taipei accounted for a combined downward revision to refinery runs of almost 700 kb/d, as each country registered multi-year lows. In 4Q19, global runs fell 230 kb/d year-on-year (y-o-y). For 2019 as a whole, runs were down 230 kb/d y-o-y. In 2020, refining intake is forecast to grow by 1.1 mb/d.



Uninspiring refining margins were the main culprit for last year's lacklustre performance. Despite annual average crude prices falling \$8/bbl to \$64/bbl, most refining margins were lower y-o-y, due to product overhang from 2017-18. Over this period, refining throughput increased by 2.3 mb/d, but refined product demand increased by only 1.7 mb/d. Higher than usual refinery outages (up by 0.8-1 mb/d y-o-y) in 2019 were more than offset by higher than average volume of new capacity coming online, which amounted to about 2 mb/d.



Oil Market Report

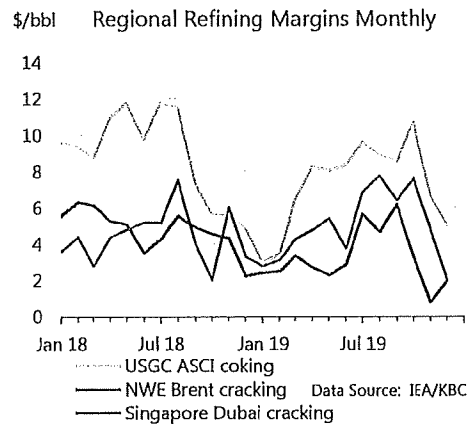
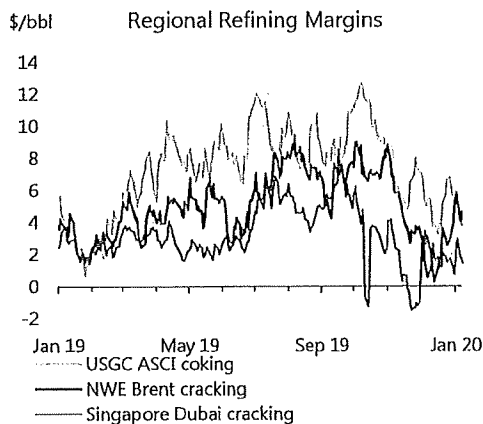
Refining

Global Refinery Crude Throughput ¹											
(million barrels per day)											
	Oct 19	Nov 19	Dec 19	4Q19	2019	Jan 20	Feb 20	Mar 20	1Q20	2Q20	2020
Americas	18.1	18.9	19.4	18.8	19.1	19.2	18.4	18.6	18.7	19.4	19.3
Europe	12.1	12.0	12.2	12.1	12.2	12.0	11.8	11.6	11.8	11.8	12.0
Asia Oceania	6.3	6.7	7.0	6.7	6.8	7.0	6.9	6.9	6.9	6.5	6.8
Total OECD	36.4	37.6	38.6	37.5	38.1	38.2	37.1	37.2	37.5	37.7	38.1
FSU	6.9	7.2	7.1	7.1	6.9	6.9	6.9	6.8	6.9	6.6	6.8
Non-OECD Europe	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
China	13.5	13.5	13.2	13.4	12.9	13.4	13.3	13.2	13.3	13.3	13.3
Other Asia	10.2	10.9	10.9	10.7	10.6	11.2	11.0	10.8	11.0	11.1	11.1
Latin America	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.2
Middle East	7.5	7.8	8.2	7.9	7.9	7.9	7.7	7.3	7.6	8.1	8.1
Africa	1.9	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1
Total Non-OECD	43.7	45.3	45.3	44.8	44.0	45.2	44.8	43.9	44.7	44.9	45.2
Total	80.2	82.9	83.9	82.3	82.1	83.4	81.9	81.1	82.2	82.5	83.2
Year-on-year change	-1.2	-0.2	0.7	-0.2	-0.2	0.7	-0.1	0.4	0.3	1.5	1.1

¹ Preliminary and estimated runs based on capacity, known outages, economic runcuts and global demand forecast

Margins

Refining margins in December fell further under strong pressure from crude prices. Only Urals margins in North West Europe were up month-on-month (m-o-m) due to exceptionally weak Urals differentials, which dropped \$3/bbl. Urals North West Europe daily quotes flipped from premiums in November to wide discounts in December, as refining throughput in North West Europe, Ural's major European market, was estimated 450 kb/d lower y-o-y. However, even complex Urals margins stayed below \$1/bbl due to falling high sulphur fuel oil cracks.



In the US, coking margins reflect the economics of refineries with fuel oil yields below 3%, meaning they are practically immune from movements in HSFO cracks. However, they are especially exposed to the seasonality in gasoline cracks, due to gasoline yields of about 40-50%. This explains the normal weakness in winter, and was the case for last December, too.

Singapore Dubai margins increased m-o-m in December. For the Singapore Dubai cracking margin only, starting from the first pricing day in December, we have changed the fuel oil index used in the margin calculation from the 3.5% sulphur assessment to the 1% sulphur assessment.

This attempts to account for some fuel oil production moving to the 0.5% bunker grade, but since it is very likely that not all volumes have moved to the compliant fuel pool, we consider the 1% assessment a reasonable proxy as a temporary measure.

Our methodology is being improved to reflect recent developments in refining economics that are driven by several factors. Crude slate changes have rendered some traditional margin indicators more niche and less relevant for particular regions. For example, Urals in the Mediterranean region has become a less popular feedstock as Russia gradually diverts flows from the Black Sea to the Baltics and also to Asian markets. At the same time, Middle Eastern and Latin American grades have increased their share in the Mediterranean's medium-heavy crude markets. Light sweet US crudes, too, are gaining popularity in Europe and Asia.

We are also reconsidering the choice of refinery configurations for margin purposes. For example, cokers have become more widespread, and the role of petrochemical integration has increased, which needs to be addressed by dedicated indicative margins. In addition to this, the significance of hydroskimming margins for our high-level analysis and discussion is declining, with the IMO specification change narrowing the market for high-sulphur fuel oils.

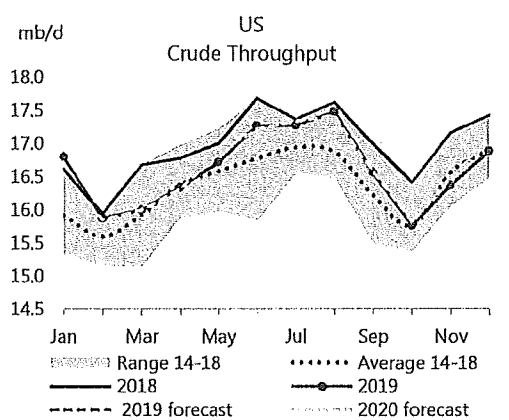
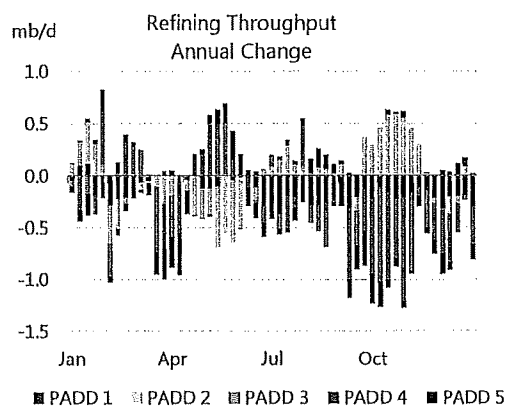
IEA/KBC Global Indicator Refining Margins ¹										
(\$/bbl)										
	Monthly Average				Change	Average for week ending:				
	Sep 19	Oct 19	Nov 19	Dec 19	Dec 19-Nov 19	13 Dec	20 Dec	27 Dec	03 Jan	10 Jan
NW Europe										
Brent (Cracking)	6.42	7.57	4.82	2.01	↓ -2.81	0.85	2.03	2.84	4.94	4.01
Urals (Cracking)	6.61	5.61	0.11	0.77	↑ 0.66	-0.94	1.61	2.14	4.51	2.21
Brent (Hydroskimming)	4.33	5.29	2.23	0.82	↓ -1.41	-0.62	1.06	1.90	4.30	4.55
Urals (Hydroskimming)	1.38	-2.64	-9.92	-8.69	↑ 1.22	-10.31	-7.71	-7.51	-5.02	-6.08
Mediterranean										
Es Sider (Cracking)	7.63	9.24	5.40	3.76	↓ -1.64	2.32	4.08	5.19	6.91	5.73
Urals (Cracking)	7.24	7.39	0.63	-0.42	↓ -1.05	-1.75	-0.20	1.09	2.89	1.73
Es Sider (Hydroskimming)	5.22	6.68	2.82	2.39	↓ -0.43	0.70	2.87	4.15	6.16	6.09
Urals (Hydroskimming)	1.24	-1.06	-10.83	-11.36	↓ -0.53	-12.59	-11.05	-9.94	-8.01	-7.74
US Gulf Coast										
Mars (Cracking)	2.65	3.25	-2.36	-3.45	↓ -1.09	-4.11	-4.02	-2.22	-2.80	-4.22
50/50 HLS/LLS (Coking)	10.22	12.87	7.90	7.31	↓ -0.58	6.31	7.01	9.08	8.22	7.14
50/50 Maya/Mars (Coking)	5.30	9.37	6.87	4.05	↓ -2.83	3.59	3.43	4.84	3.53	2.13
ASCI (Coking)	8.56	10.70	6.67	5.01	↓ -1.65	4.31	3.97	6.35	5.18	4.05
US Midwest										
30/70 WCS/Bakken (Cracking)	12.11	10.42	7.98	6.18	↓ -1.80	6.13	5.28	6.63	6.50	7.57
Bakken (Cracking)	14.85	13.20	11.31	8.71	↓ -2.60	8.68	7.40	9.15	8.34	10.47
WTI (Coking)	13.37	13.46	10.88	7.99	↓ -2.89	8.27	6.29	8.08	6.13	6.58
30/70 WCS/Bakken (Coking)	15.24	14.88	14.05	11.35	↓ -2.70	11.75	9.88	11.17	10.42	12.08
Singapore										
Dubai (Hydroskimming)	3.07	-3.81	-8.55	-9.53	↓ -0.98	-9.39	-9.54	-9.21	-8.58	-7.27
Tapis (Hydroskimming)	1.27	0.22	-3.98	-5.14	↓ -1.16	-5.44	-4.86	-4.90	-2.65	-2.12
Dubai (Hydrocracking)	6.18	3.31	0.79	1.98	↑ 1.20	1.97	1.61	1.66	1.88	1.94
Tapis (Hydrocracking)	3.64	4.80	0.78	-1.45	↓ -2.22	-1.84	-1.60	-1.72	0.22	-0.70

¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

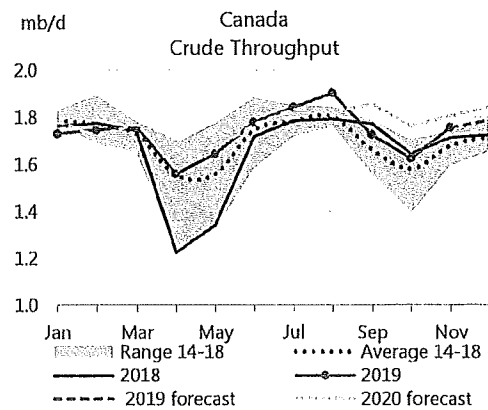
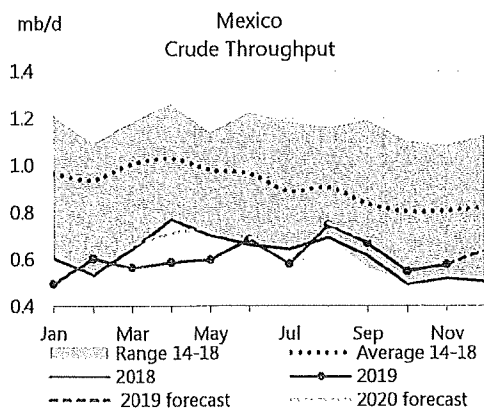
Source: IEA, KBC Advanced Technologies (KBC)

OECD refinery throughput

US refining throughput in December rose 510 kb/d m-o-m but runs were down 540 kb/d y-o-y. 2019's annual decline of 365 kb/d was the first in a decade. For the year on average, reported outages were about 20%, or 200 kb/d higher y-o-y. The shutdown of the Philadelphia refinery in mid-2019 accounted for only 130 kb/d to the annual decline, while PADD 3, traditionally the locomotive of US refining, saw runs fall by 180 kb/d y-o-y. The crude slate continued to lighten, and coking units throughput declined by 145 kb/d from January through October compared to year earlier. Our throughput forecast for 2020 is essentially flat y-o-y, as refined product demand in the US is expected to decline, offset by increases in LPG/ethane demand.

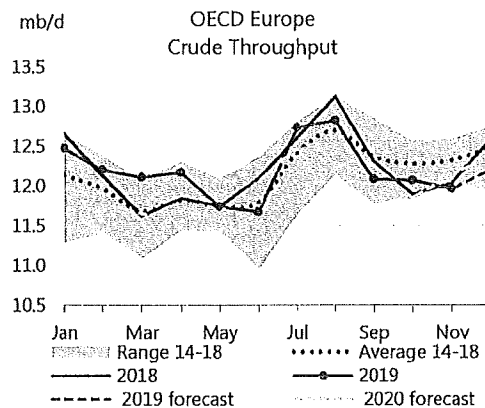
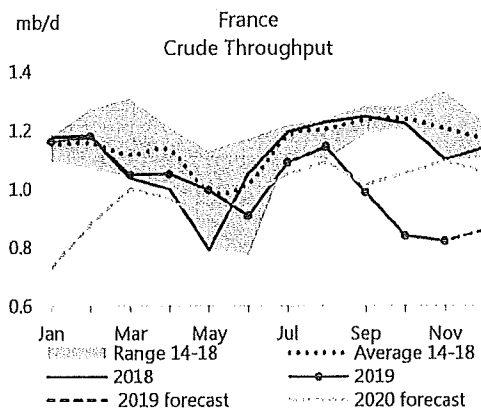


Mexico has not reported refinery intake figures since September 2019. We revised down our estimate for October to 540 kb/d, and pegged November throughput at 570 kb/d using product output reported by Sener as a proxy. This is just over half of the 1 mb/d target set for end-2019 by the Ministry of Energy. We still expect some recovery in Mexico in 2020, with runs forecast to reach 800 kb/d in 4Q20. However, it is difficult to forecast with any certainty as repair works announced at several refineries seem to be progressing simultaneously. If all maintenance concludes this year, throughput could end up higher than our forecast.

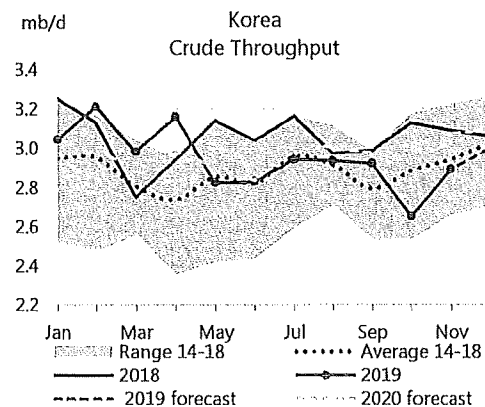
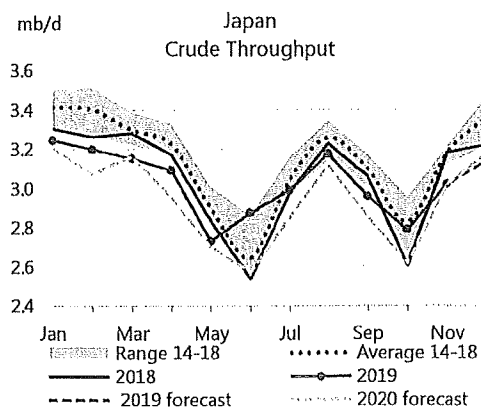


Canadian runs declined seasonally in October, falling y-o-y for the second consecutive month. The 80 kb/d Northwest Redwater refinery, Canada's newest facility, was expected to fix technical issues with its gasifier and start processing bitumen feedstock by the end of last year, but announced further delays. The refinery is currently running on synthetic crude oil.

In Europe, French strikes, combined with a fire at Total's 270 kb/d Gonfreville plant during the holiday period, reduced affected throughput. Shell's Pernis, Netherlands' largest refinery, halted operations for several days in December, following a crude leak. On a more positive note, Germany's Bayernoil finally restarted the Vohburg refinery's second crude distillation unit in mid-December. It took the refinery 14 months to come back fully online after a fire in September 2018. Another prominent fire-related shutdown was at Eni's Sannazzaro refinery heavy residue treatment unit (Eni slurry technology), that has been offline since December 2016. It is expected to restart in March, after the IMO start-date, for which the unit and the technology development were initially planned for.



December preliminary Euroilstock numbers for 15 EU countries plus Norway showed refining throughput up 460 kb/d m-o-m, almost half of which, surprisingly, came from France. We have, however, revised down our assessment for French December throughput to 850 kb/d. January throughput is estimated at 720 kb/d, the lowest since October 2010, which was another period of extended labour strikes.



OECD Asia refining throughput increased 475 kb/d m-o-m in November, but activity in the region's three major countries – Japan, Korea and Australia, was down y-o-y.

Refinery Crude Throughput and Utilisation in OECD Countries										
(million barrels per day)										
	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Change from Oct 19	Nov 18	Utilisation rate ¹ Nov 19	Nov 18
US ²	17.25	17.26	17.47	16.55	15.75	16.36	0.61	-0.80	86%	90%
Canada	1.77	1.83	1.89	1.72	1.62	1.75	0.13	0.04	87%	85%
Chile	0.20	0.20	0.21	0.21	0.20	0.20	0.00	0.01	69%	83%
Mexico	0.68	0.57	0.74	0.66	0.54	0.57	0.03	0.06	34%	31%
OECD Americas ³	19.90	19.87	20.31	19.14	18.11	18.88	0.77	-0.68	82%	85%
France	0.90	1.08	1.13	0.98	0.83	0.81	-0.02	-0.28	66%	68%
Germany	1.75	1.88	1.81	1.80	1.85	1.82	-0.03	0.13	90%	83%
Italy	1.37	1.46	1.51	1.49	1.35	1.35	0.01	-0.02	78%	79%
Netherlands	0.96	1.15	1.16	1.17	1.19	1.10	-0.09	0.08	85%	79%
Spain	1.21	1.30	1.41	1.28	1.35	1.17	-0.18	-0.21	83%	98%
United Kingdom	0.98	1.07	1.11	1.05	1.12	1.13	0.00	0.02	89%	88%
Other OECD Europe	4.50	4.79	4.69	4.32	4.38	4.58	0.20	0.21	88%	87%
OECD Europe	11.67	12.73	12.82	12.08	12.06	11.95	-0.11	-0.07	83%	84%
Japan	2.87	2.98	3.17	2.95	2.78	3.01	0.23	-0.16	85%	89%
South Korea	2.82	2.93	2.93	2.91	2.64	2.88	0.24	-0.20	84%	91%
Other Asia Oceania	0.85	0.90	0.84	0.86	0.85	0.85	0.00	-0.06	98%	104%
OECD Asia Oceania	6.53	6.82	6.94	6.72	6.27	6.75	0.48	-0.42	86%	92%
OECD Total	38.10	39.41	40.06	37.94	36.45	37.58	1.13	-1.17	83%	86%

¹ Expressed as a percentage, based on crude throughput and current operable refining capacity

² US\$0

³ OECD Americas includes Chile and OECD Asia Oceania includes Israel. OECD Europe includes Slovenia and Estonia, though neither country has a refinery

Non-OECD refinery throughput

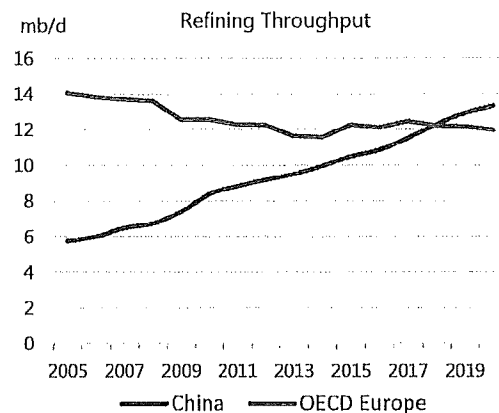
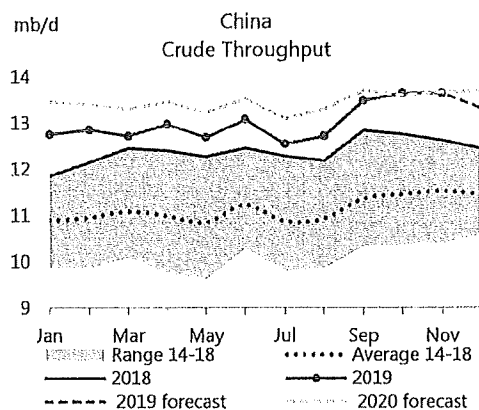
Chinese throughput in October and November was close to expectations and relatively flat at 13.5 mb/d. After overtaking OECD Europe in 2018, China further increased the gap and in 2019 refined almost 800 kb/d more. At the start of this year the Ministry of Commerce issued the first batch of crude import quotas for private sector refineries amounting to 103.8 mt, or 2 mb/d. Several independent refineries saw their allocations cut due to lower actual import volumes in 2019 or failure to meet obligations such as building gas storage facilities. Hengli and Zhejiang refineries received higher quotas in the first batch and their quota ceiling for this year is equivalent to their full capacity, meaning that they are likely to eventually receive quotas to cover their full throughput needs over the following rounds this year.

Product export quotas, on the contrary, are only allocated to state-owned majors. The first batch for 2020 was issued at 28 mt, some 50% higher than the first batch of 2019. In January-November 2019, China exported 1.2 mb/d of diesel, gasoline and kerosene (kerosene export data also include international aviation bunkers). This put the country in the top three of refined product exporters globally, along with the US and Russia. According to forecasts by CNPC, China's second-largest refiner, Chinese refined product exports in 2020 may increase by about 20% y-o-y.

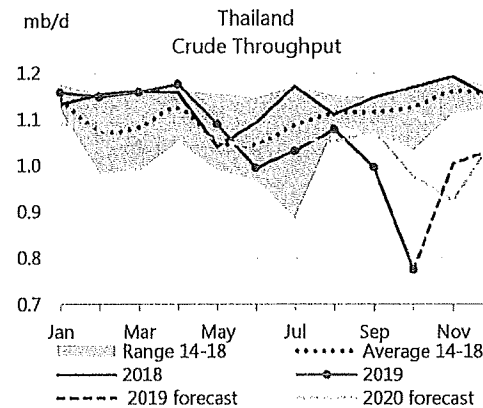
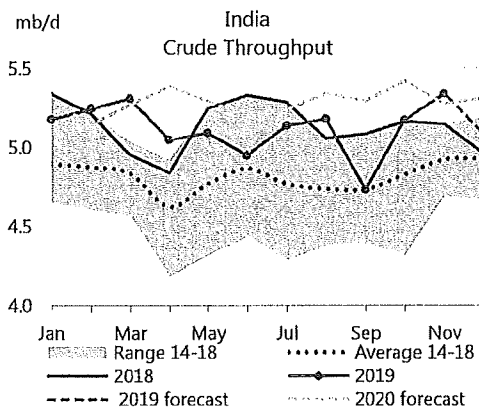
In the first days of the new IMO rules on bunker fuel sulphur emissions, China's government approved tax-free treatment for 0.5% sulphur bunker fuel, removing the previously substantial levies that could add up to \$250-300/tonne (\$35-45/bbl) to the cost of fuel supplied to the country's ports. Refiners and bunker suppliers had long lobbied for this, in order to compete

with established regional bunkering hubs such as Singapore. Several Chinese refineries announced in 2019 readiness to produce VLSFO, but the tax made the bunker sales unattractive. Typically, at least 6-7 Chinese ports feature in the rankings of the world's 10 busiest cargo ports, indicating a large potential for bunker sales growth. Cargo exports of the fuel, however, are still subject to an export duty.

After an increase of 640 kb/d in 2019, Chinese throughput is forecast to rise by 420 kb/d in 2020. Sinopec is expected to start its new 200 kb/d new refinery in Zhanjiang in 2Q20 and Zhejiang Petrochemical's second crude distillation unit will reach full capacity this year.

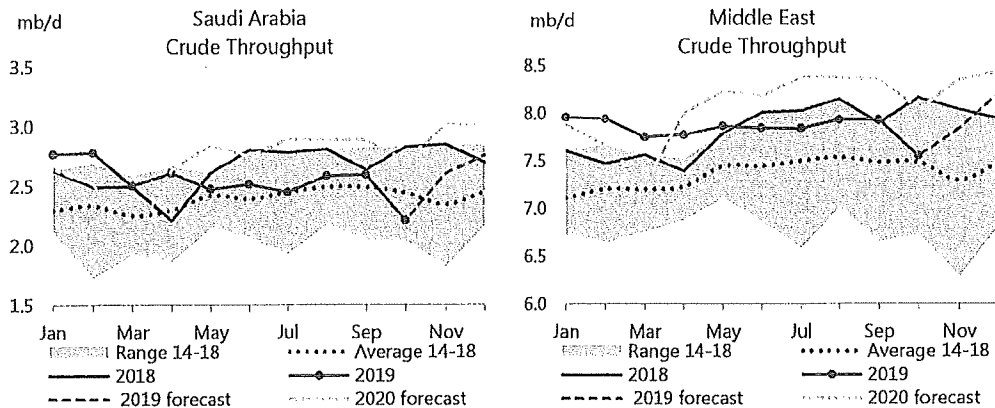


Indian refining throughput continued growing in November, reaching 5.3 mb/d and up by 200 kb/d y-o-y. Runs are set to increase 170 kb/d in 2020 after a small decline in 2019. October refining activity in Thailand and Chinese Taipei dropped to below 800 kb/d from their average levels of 1.1 mb/d and 0.9 mb/d, respectively, as maintenance shutdowns cut runs at several large refineries.



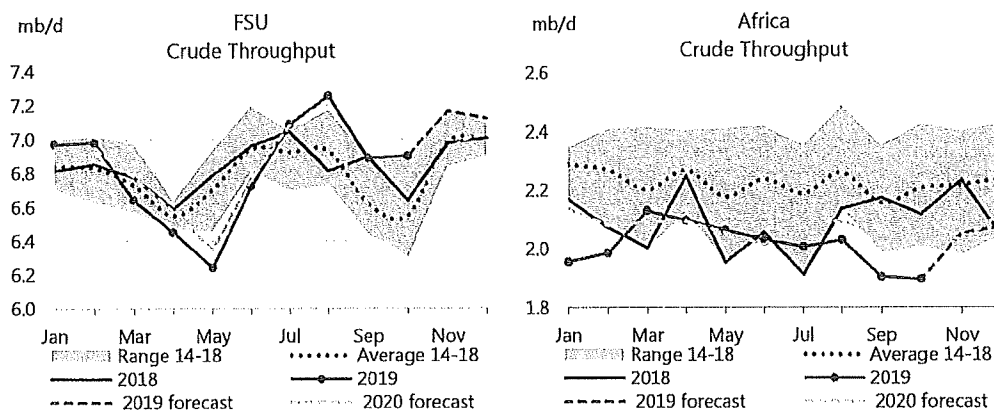
Counter-intuitive developments in Saudi Arabian refining continued through October, with refining activity tumbling 390 kb/d m-o-m, while September data, reported earlier, showed a much smaller impact from the Abqaiq attacks than anticipated. At just 2.2 mb/d, runs were down 600 kb/d y-o-y. Saudi refineries also announced a particularly heavy maintenance schedule for 1Q20, peaking in March at close to 1 mb/d, but the effective impact is likely to be

lower. The 400 kb/d Jazan refinery may be commissioned in the first half of 2020, if plans announced in the Saudi Aramco IPO prospectus still hold.



Elsewhere in the Middle East, Bahrain throughput in October climbed 40 kb/d m-o-m, while Iraq's fell 30 kb/d to 630 kb/d and Kuwait was flat. Condensate splitters are due to come online in Iran and the UAE in 1Q20, but neither country has reported refining activity levels for 2019.

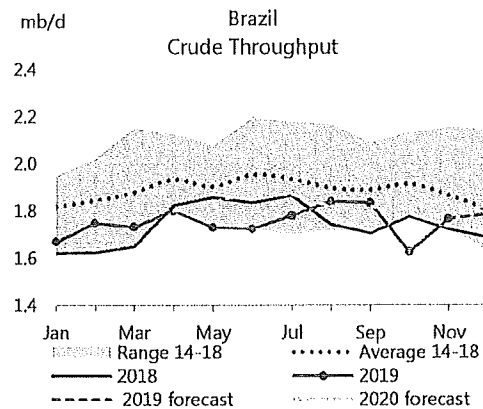
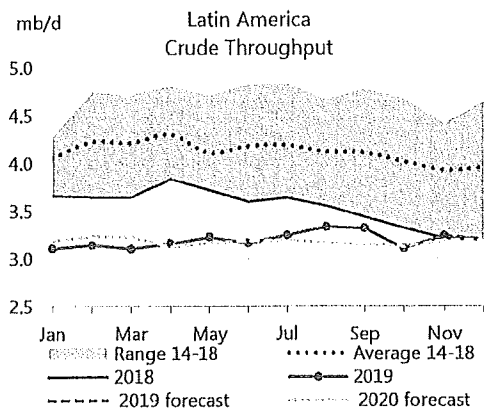
Russian throughput was roughly flat in December, at 5.9 mb/d. The outlook remains clouded given their very high yields of high-sulphur fuel oil. Currently at about 12%, yields have declined from 20-25% seen a few years ago, but large-scale investments need to continue to further reduce fuel oil output. Belarus and Russia are going through a fresh episode of their energy transfer dispute. Russia halted deliveries of crude oil to Belarus refineries for a few days at the start of January, causing a drop in processing rates. Belarus wants a discount for Russian crude purchases and higher transit fees for the Druzhba pipeline system.



Algerian runs fell to 450 kb/d in October, down 250 kb/d since June. The country's refineries largely process domestic light sweet grades and are a major supplier of low sulphur straight run residual oil, now a sought-after blendstock for 0.5% sulphur marine bunker fuel. We have estimated November and December runs higher, at about 600 kb/d. In October, refiners in Egypt maintained processing volumes above 600 kb/d, which they reached in September after nine years of lower runs. Nigeria has not reported any crude intake since July. Libya's only working refinery, Zawia, is at risk of shutting due to a recent escalation in military action.

Oil Market Report

Refining

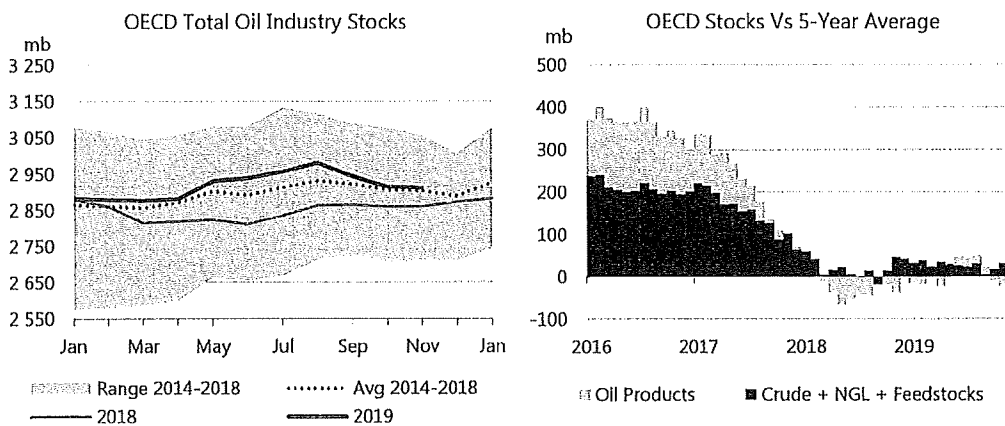


Brazil's refining activity rebounded 140 kb/d m-o-m in November after October labour strikes and outages subsided. The 166 kb/d REGAP refinery was the first to enter into a binding phase in Petrobras's 1 mb/d downstream asset divestment programme. Argentinian throughput edged down to 490 kb/d in November, but was up 35 kb/d y-o-y. The Curaçao refinery formally signed a sales and purchase agreement with Klesch, an Industrial group, to take over the facilities from PDVSA. The refinery has been idle since mid-2018. The restart date is not clear yet as the refinery is formally under lease to PDVSA until end-2020.

Stocks

Overview

OECD industry stocks fell 2.9 mb month-on-month (m-o-m) in November to 2 912 mb. This was largely in line with the five-year average draw of 4.3 mb. At end-month, total inventories stood 8.9 mb above the average. Based on a forward OECD demand metric, they covered 60.6 days, 0.6 days below the average.



OECD crude oil stocks rose counter-seasonally by 10 mb to 1 118 mb. Crude stocks in the Americas built by a modest 0.5 mb (they normally build 3.1 mb) due to increased refinery runs in the US (+605 kb/d m-o-m in November). European inventories rose by 3.8 mb owing to lower refinery throughputs (-110 kb/d m-o-m). Crude stocks in Asia Oceania built by 5.6 mb, led by a larger than usual increase in Korea.

Oil product inventories drew 7.3 mb to 1 433 mb. The fall was counter-seasonal and led by a large draw in the other oil category (-27.6 mb). Fuel oil stocks also fell by 0.6 mb. In contrast, motor gasoline stocks rose 15.9 mb, more than the usual build of 9.2 mb for the month. The US led the inventory build due to surging gasoline imports in mid-November. Middle distillate stocks rose 4.9 mb, largely in line with the five-year average.

Preliminary data for December was mixed: inventories built in the US and Europe but drew in Japan. US crude stocks fell 16.7 mb due to record high crude exports that reached 4.46 mb/d in the week ending 27 December. Product inventories in the US, by contrast, rose by 29.7 mb. Middle distillates and gasoline inventories built by 18 mb and 17.6 mb, respectively. Crude stocks in Europe drew 1.3 mb amid higher m-o-m refinery runs in the region. Product inventories rose 7.7 mb, led by a large build of middle distillate stocks (6.4 mb). Japanese crude oil inventories built counter-seasonally by 3.2 mb. Total product stocks in Japan fell by 3.6 mb in line with the five-year average.

Oil Market Report

Stocks

Preliminary Industry Stock Change in November 2019 and Third Quarter 2019												
November 2019 (preliminary)					Third Quarter 2019							
(million barrels)					(million barrels per day)				(million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
Crude Oil	0.5	3.8	5.6	10.0	0.0	0.1	0.2	0.3	-0.4	-0.1	-0.1	-0.5
Gasoline	13.7	1.6	0.6	15.9	0.5	0.1	0.0	0.5	0.0	0.0	0.0	-0.1
Middle Distillates	0.8	2.6	1.6	4.9	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.2
Residual Fuel Oil	1.3	-0.7	-1.1	-0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Other Products	-22.0	-1.8	-3.7	-27.6	-0.7	-0.1	-0.1	-0.9	0.2	0.0	0.1	0.3
Total Products	-6.3	1.6	-2.6	-7.3	-0.2	0.1	-0.1	-0.2	0.2	0.1	0.2	0.5
Other Oils ¹	-5.0	1.2	-1.7	-5.6	-0.2	0.0	-0.1	-0.2	0.1	0.0	0.0	0.1
Total Oil	-10.8	6.6	1.3	-2.9	-0.4	0.2	0.0	-0.1	-0.1	0.0	0.1	0.1

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Data for October show that total OECD stocks were revised up by 11 mb. The largest adjustment was for crude oil, which rose by 9.3 mb. European product stocks were revised up by 6.3 mb due to a large change in the other products category. September stock figures were also revised up by 8.6 mb, notably in Europe (8.4 mb).

Revisions versus December 2019 Oil Market Report									
(million barrels)									
	Americas		Europe		Asia Oceania		OECD		
	Sep-19	Oct-19	Sep-19	Oct-19	Sep-19	Oct-19	Sep-19	Oct-19	
Crude Oil	3.3	3.0	2.3	2.3	-0.4	3.9	5.2	9.3	
Gasoline	0.0	4.1	-1.0	0.1	0.0	-0.5	-1.0	3.7	
Middle Distillates	0.0	-3.7	-0.4	-3.8	0.0	-1.3	-0.4	-8.7	
Residual Fuel Oil	0.0	1.0	2.1	3.6	0.1	-0.4	2.2	4.1	
Other Products	0.0	0.6	5.6	6.4	0.0	-0.2	5.6	6.9	
Total Products	0.0	2.0	6.3	6.3	0.1	-2.4	6.4	5.9	
Other Oils ¹	-2.9	-4.4	-0.2	0.3	0.0	-0.2	-3.1	-4.2	
Total Oil	0.5	0.7	8.4	9.0	-0.3	1.4	8.6	11.0	

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Recent OECD industry stock changes

OECD Americas

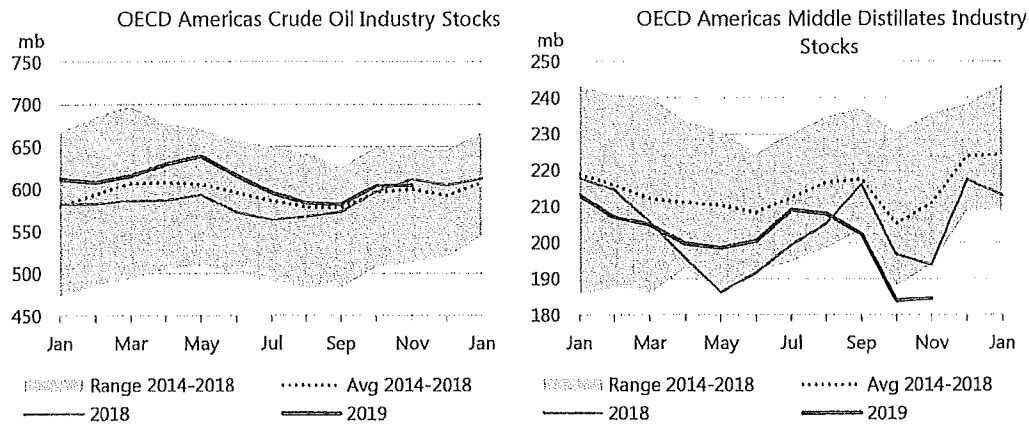
Industry stocks in the OECD Americas region fell by 10.8 mb m-o-m in November to 1 536 mb, 8.7 mb above the five-year average. On a forward demand metric, stocks stood at 60.4 days, one day below the average. The fall was counter-seasonal for the month due to large draws in oil products.

Crude oil stocks built a modest 0.5 mb m-o-m and stood at 605 mb, 5.1 mb above the five-year average. The build was lower than the usual of 3.1 mb due to increased refinery runs in the US (+605 kb/d m-o-m in November). Relatively high crude exports from the US, which were more than 3 mb/d on average according to the *US Census Bureau*, also explain lower crude stock builds in the region.

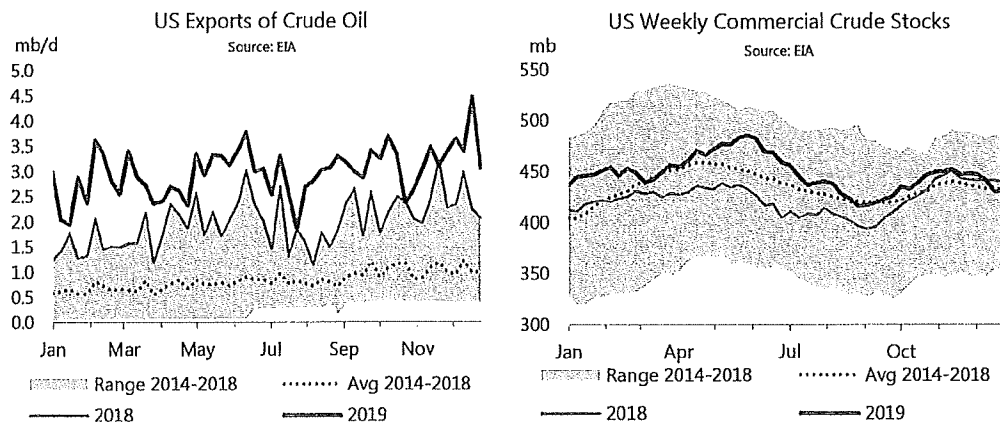
Oil product inventories drew counter-seasonally by 6.3 mb owing to a large fall of 22 mb in the "other oil" category, which mainly includes propane, propylene and natural gas liquids. Motor gasoline stocks rose by 13.7 mb, which is possibly attributable to a surge in gasoline imports in mid-November in the US. Fuel oil stocks rose 1.3 mb largely in line with the seasonal trend. After drawing heavily in October, middle distillate inventories built less than usual by 0.8 mb.

Oil Market Report

Stocks



Preliminary data for the US from the *Energy Information Administration* showed a crude oil inventory draw of 16.7 mb m-o-m in December. The fall was larger than the usual 6.6 mb as crude exports surged to record high of 4.46 mb/d in the week ending 27 December and 3.7 mb/d on average for the month (+655 kb/d m-o-m). Crude inventories in the US often fall in December because of taxes which are applied to the value of crude oil and petroleum product inventories in storage on 31 December in certain states (notably Texas). Total oil product stocks rose by a large 29.7 mb. Middle distillates and gasoline inventories built by 18 mb and 17.6 mb, respectively. Other refined products fell 5.1 mb. Fuel oil stocks also drew by 0.7 mb.



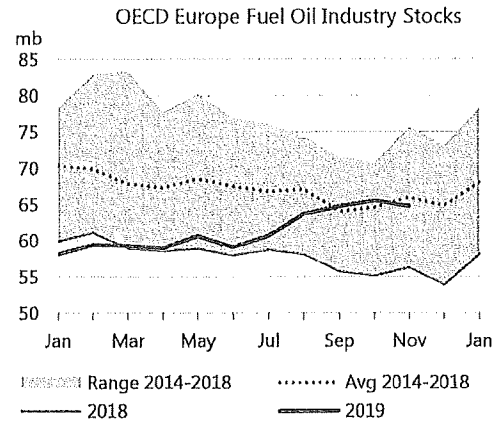
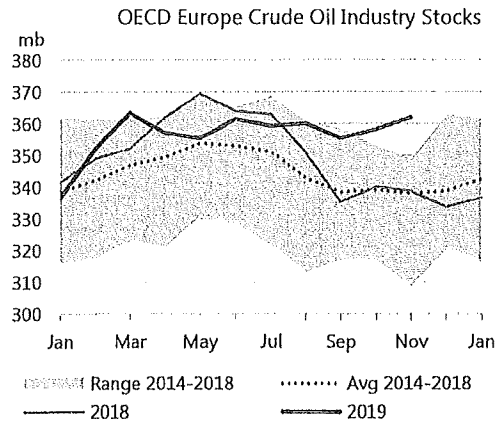
OECD Europe

Total commercial stocks in OECD Europe rose in November by 6.6 mb to 980 mb and they stood 28.7 mb above the five-year average. The build was more than the usual 1.5 mb for the month due to a counter-seasonal increase in crude oil stocks.

Crude oil inventories in Europe built 3.8 mb to 362 mb, thus reaching their highest level since March 2019. They stood 23.9 mb above the five-year average. The build was attributable to lower m-o-m refinery runs in the region (-110 kb/d). In the Netherlands, refinery throughputs were 90 kb/d lower than the previous month, leading to a build in crude inventories of 1.1 mb. Among others, stocks built in Germany and France by 0.7 mb and 0.4 mb, respectively, while Italy partially offset regional builds by drawing stocks by 1.1 mb.

Oil Market Report

Stocks

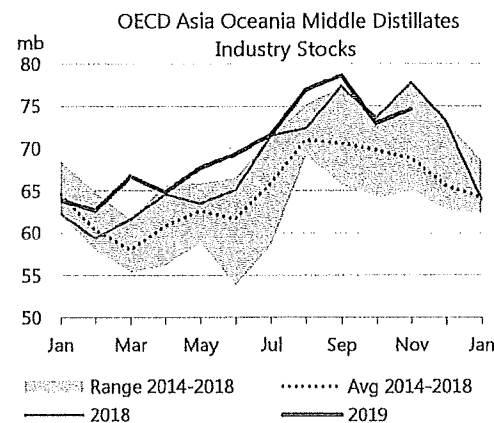
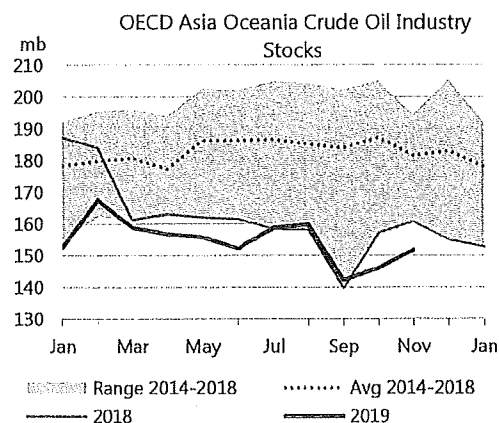


Oil product stocks rose 1.6 mb. Middle distillates built counter-seasonally by 2.6 mb, while typically they draw 1.3 mb. Motor gasoline also rose by 1.6 mb. By contrast, fuel oil and "other oil" inventories fell by 0.7 mb and 1.8 mb, respectively.

Preliminary November data from *Euroilstock* showed overall inventories building by 6.4 mb. Product inventories rose 7.7 mb, led by a large build of middle distillate stocks (6.4 mb). Naphtha and gasoline stocks also rose by 1.3 mb and 0.5 mb, respectively. Fuel oil inventories fell 0.5 mb. Crude stocks drew 1.3 mb, notably in France (-4 mb) and Spain (-2.9 mb). On the contrary, crude inventories in Italy rose 4.4 mb.

OECD Asia Oceania

In November, total commercial stocks in the Asia Oceania region rose counter-seasonally by 1.3 mb to 396 mb. The end-month stock level stood 28.5 mb below the five-year average. The build was attributable to a large counter-seasonal crude stock increase.



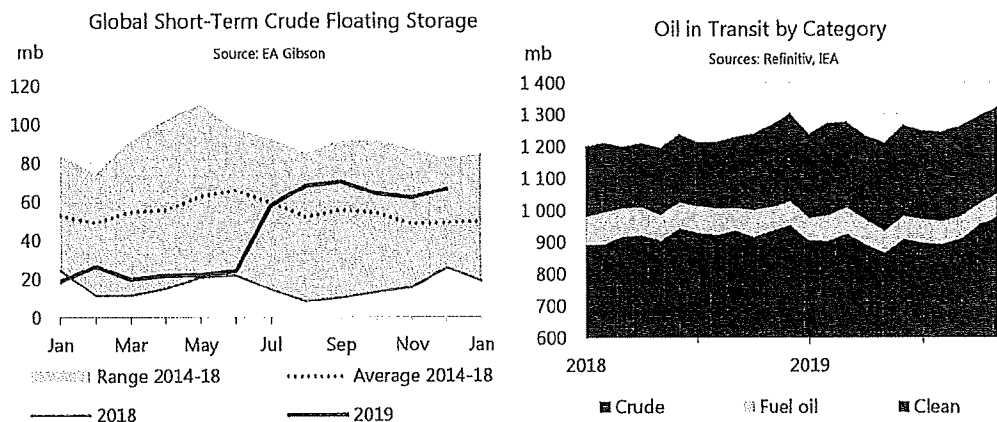
Crude inventories in Korea rose by 7.8 mb, much more than the usual build of 1 mb for the month. Japanese crude stocks fell 2.2 mb as refinery runs increased by 230 kb/d m-o-m. For the region as a whole, crude stocks built counter-seasonally by 5.6 mb to 152 mb.

Oil product stocks in the region fell 2.6 mb owing larger than normal draws in “other oil” stocks (-3.7 mb). Motor gasoline and middle distillate inventories built counter-seasonally by 0.6 mb and 1.6 mb, respectively. Fuel oil inventories fell 1.1 mb.

Preliminary data for December from the *Petroleum Association of Japan* showed total stocks falling by 3 mb m-o-m, less than the usual draw of 8.2 mb. Crude oil inventories built counter-seasonally by 3.2 mb. Total product stocks fell by 3.6 mb in line with the five-year average. Middle distillate stocks drew more than usual by 4.6 mb and offset counter-seasonal builds in gasoline (1 mb) and other product (1 mb) stocks. Fuel oil stocks fell 0.9 mb.

Other stock developments

Short-term floating storage of crude oil built 4.5 mb in December to 66.5 mb, according to data from *EA Gibson*. Storage in the Middle East Gulf rose 4.5 mb to 64.2 mb as the number of Iranian VLCCs used for floating storage increased by two to 28, thereby reaching their highest since April 2016. The total number of vessels thought to hold Iranian crude oil is 31, including three Suezmax ships.

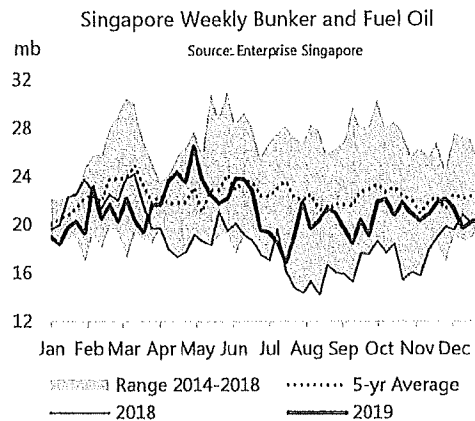
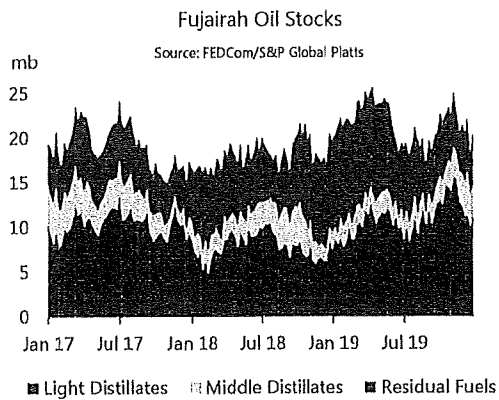


Seaborne oil in transit volumes, based on data from *Refinitiv*, rose 30.6 mb in November due to m-o-m increase in crude oil (25.4 mb). Higher seaborne crude exports from the UAE, Venezuela and Iraq offset declines from Nigeria and Angola according to *Kpler* data. Fuel oil on-the-water also rose by 6 mb. Clean products, on the contrary, fell by 0.8 mb.

Oil stocks in major bunkering hubs fell in December. In Fujairah, stocks drew by 2.6 mb m-o-m according to data from *FEDCom and S&P Global Platts*. Residual fuel inventories showed a second consecutive monthly draw and fell by 3.3 mb in end-December. Light and middle distillate stocks rose 0.2 mb and 0.4 mb, respectively. Bunker and fuel oil inventories in Singapore, the world's largest bunkering hub, also drew by 1.1 mb during the month based on data from *Enterprise Singapore*. Middle distillates and residual fuel oil fell 0.1 mb and 1.5 mb, respectively, while light distillates rose 0.5 mb. Ahead of the *International Maritime Organisation's* new fuel regulations, both bunkering hubs showed residual fuel oil stocks falling while lighter distillate products built.

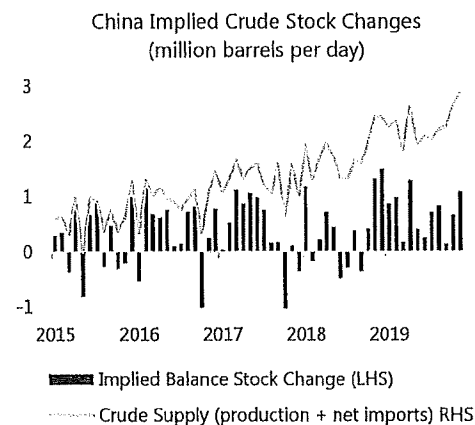
Oil Market Report

Stocks



Chinese implied crude stocks built by 32.7 mb (1.1 mb/d) in November according to data derived from reported crude production, refinery runs and crude imports. Refinery runs remained high at 13.5 mb/d amid steady refining margins. Net crude imports reached record high of over 11 mb/d.

Stockpiles in 19 non-OECD countries reporting to the *JODI* database rose 18 mb m-o-m in October to 623 mb. Crude stocks in Saudi Arabia rose by 15.6 mb, at an average rate of 505 kb/d, to rebuild stocks drawn down after the attack in September. Nigerian and Iraqi crude stocks also rose by 4.2 mb and 3 mb, respectively. By contrast, crude inventories in Thailand fell by 1.5 mb. Gabon also drew 1.2 mb. For oil products, India's stocks increased by 3.2 mb. Saudi Arabia's stocks fell by 2.8 mb. Chinese Taipei and Thailand also saw stocks fall, by 2.5 mb and 2.2 mb, respectively.



Oil Market Report

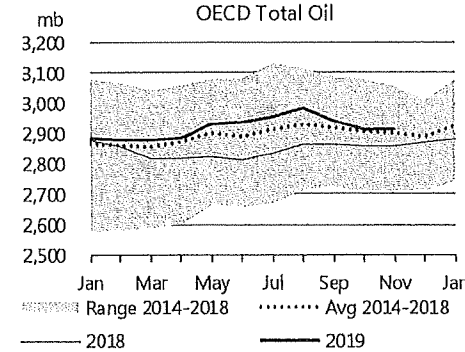
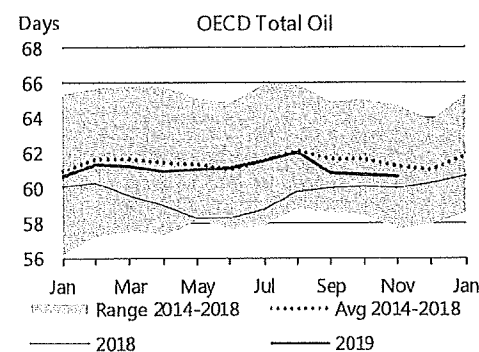
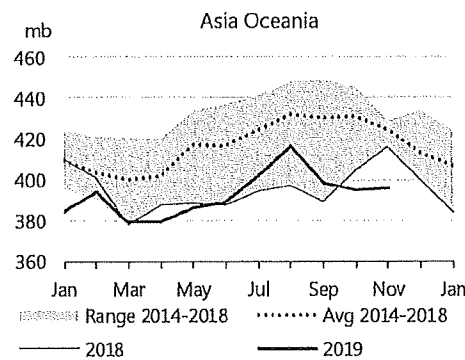
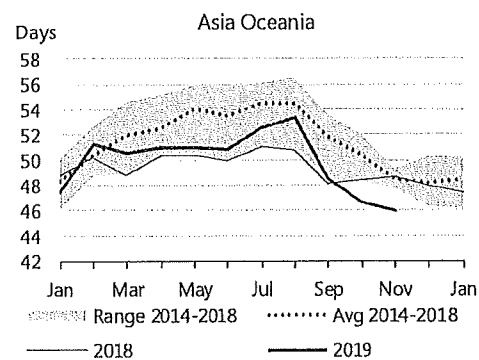
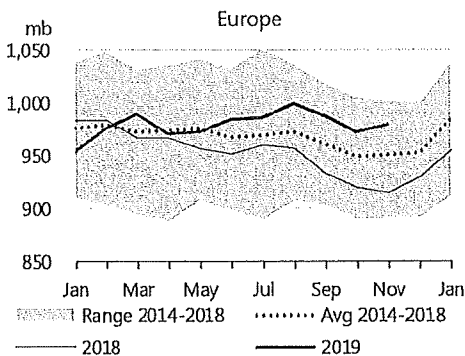
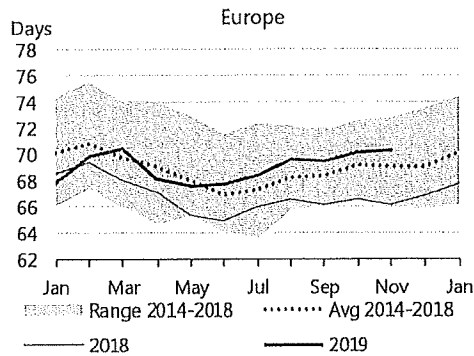
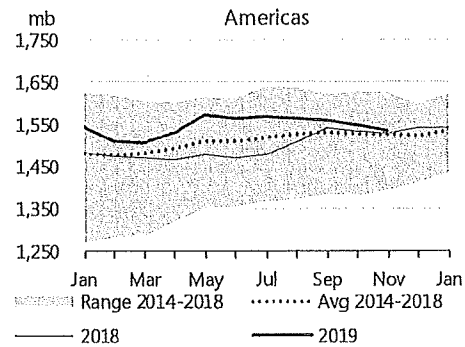
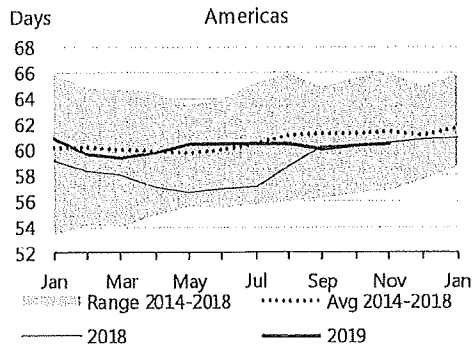
Supply

Regional OECD End-of-Month Industry Stocks

(in days of forward demand and million barrels of total oil)

Days¹

Million Barrels

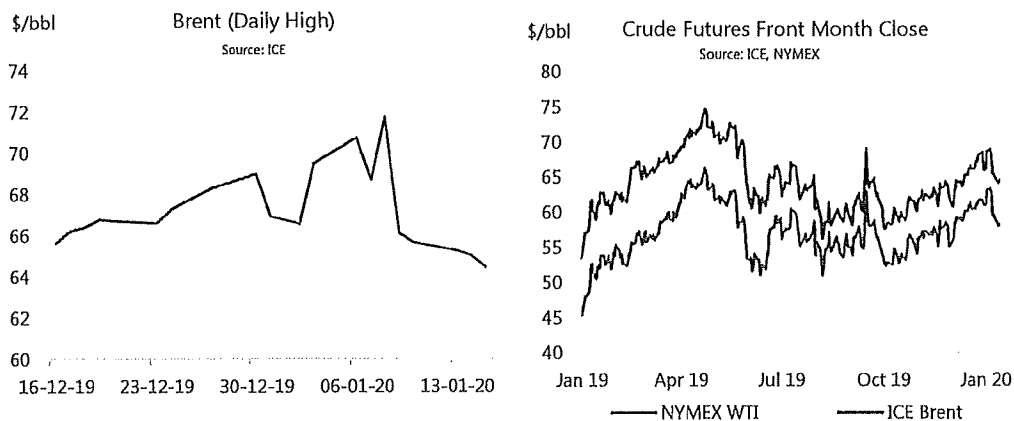


1 Days of forward demand are based on average OECD demand over the next three months.

Prices

Overview

Oil prices had a volatile start to 2020 as US/Iran tensions caused ICE Brent futures to spike to almost \$72/bbl in intra-day trading on 8 January. In December, Brent prices rose by \$2.46/bbl to average \$65.17/bbl on positive news regarding trade disputes and with further OPEC+ cuts announced. As we publish this report, the Brent price has slipped back to \$64/bbl.



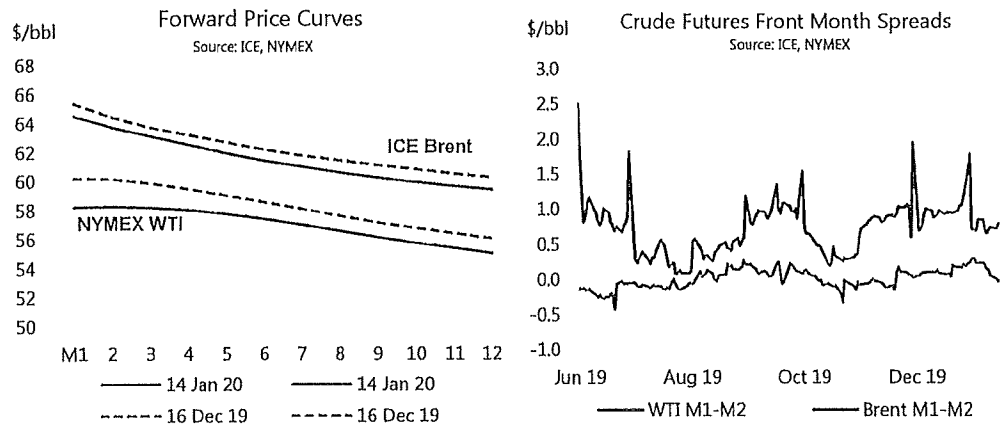
For 2019 as a whole, Brent averaged \$64.16/bbl, \$7.53/bbl below 2018. From \$53.80/bbl at the start of the year prices rose to more than \$74/bbl in late April on concern about supply as Iranian export waivers were due to end and as an OPEC+ output cut agreement took effect. Then, fears about oil demand growth dominated sentiment and prices fell below \$60/bbl in August, although they were given a short term boost after the attacks on Saudi Arabia in September. Prices strengthened during 4Q19 on positive economic indicators and the signing of an *interim* trade agreement between the US and China which bolstered confidence in healthy demand growth for 2020. In early January, further support came when the US and Iran clashed in Iraq, raising fears that there could be a disruption to Middle Eastern oil supplies. Prices fell back as tensions eased.

The start of January also heralded the application of the International Maritime Organisation's (IMO) new regulations on sulphur levels in marine fuels. Preparation and transitioning of fuel systems and logistics began in 4Q19. Since then, fuel oil prices have displayed the largest reaction as cracks for high sulphur fuel oil (HSFO) languish while compliant fuel oil grades gain. The market is also indicating ship operator's preference for very low sulphur fuel oil (VLSFO) over marine gasoil (MGO) as their prices converge. The impact has also been felt in freight markets as steeper fuel costs and bunkering delays feed through to higher rates.

Futures markets

ICE Brent and NYMEX WTI rose for the second consecutive month in December, gaining \$2.46/bbl and \$2.73/bbl, respectively. Backwardation of the forward curves has eased since

mid-December. It remains steep for Brent with contracts delivered in March (Month 1) priced \$1.39/bbl above those delivered in May. The Month 1-Month 3 futures price spread for WTI is flat at \$0.04/bbl.



The Brent-WTI futures spread narrowed by \$0.27/bbl month-on-month (m-o-m) in December, to average \$5.37/bbl. The Brent-Dubai Exchange of Futures for Swaps (EFS) slipped by \$0.63/bbl m-o-m as OPEC+ prepared to cut output further at the start of 2020. At \$2.71/bbl, the EFS still remained relatively high, reflecting healthy demand for light sweet crude.

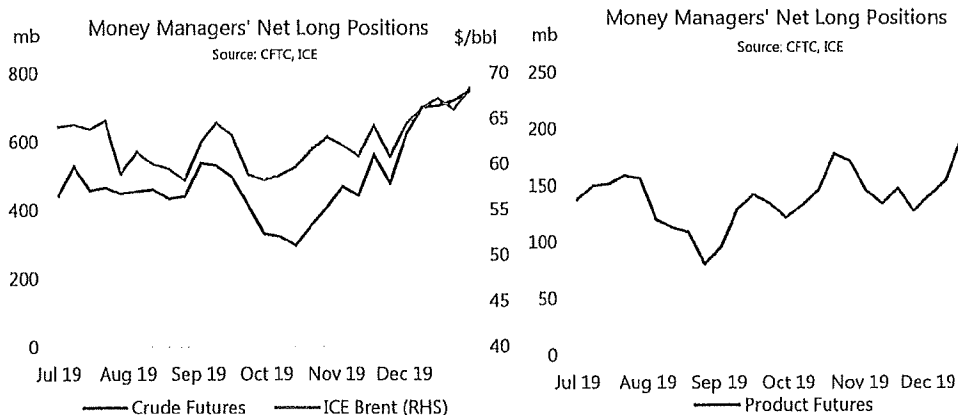
Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)										
	Oct	Nov	Dec	Dec-Nov Avg Chg	% Chg	Week Commencing:				
						09 Dec	16 Dec	23 Dec	30 Dec	06 Jan
NYMEX										
Light Sweet Crude Oil	54.01	57.07	59.80	2.73	4.8	59.25	60.75	61.26	61.74	60.84
RBOB	67.94	69.12	70.08	0.95	1.4	69.09	70.94	72.80	72.23	70.88
ULSD	80.97	80.73	83.38	2.64	3.3	82.12	84.92	85.68	85.62	83.19
ULSD (\$/mmbtu)	14.28	14.24	14.70	0.47	3.3	14.48	14.98	15.11	15.10	14.67
Henry Hub Natural Gas (\$/mmbtu)	2.34	2.63	2.29	-0.34	-13.0	2.27	2.31	2.21	2.16	2.16
ICE										
Brent	59.63	62.71	65.17	2.46	3.9	64.35	66.06	67.42	67.32	66.59
Gasoil	78.60	78.04	80.51	2.47	3.2	78.65	82.09	83.11	83.15	81.33
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-5.82	-5.64	-5.37	0.27		-5.10	-5.31	-6.16	-5.58	-5.75
NYMEX ULSD - WTI	26.96	23.66	23.58	-0.09		22.87	24.17	24.42	23.88	22.35
NYMEX RBOB - WTI	13.93	12.05	10.28	-1.78		9.84	10.19	11.54	10.49	10.04
NYMEX 3-2-1 Crack (RBOB)	18.27	15.92	14.71	-1.22		14.18	14.05	15.83	14.95	14.14
NYMEX ULSD - Natural Gas (\$/mmbtu)	11.94	11.61	12.42	0.81		12.21	12.67	12.90	12.94	12.51
ICE Gasoil - ICE Brent	18.97	15.33	15.34	0.01		14.30	16.03	15.69	15.83	14.74

Source: ICE, NYMEX.

In December, hedge funds sharply increased their net length in crude and oil product futures as a more optimistic outlook for the global economy (outlined above) and the deeper OPEC+ cuts supported the view that there may be more upside to prices. Net length in crude futures made large gains immediately following the announcement by OPEC+ on 6 December and continued to rise, reaching 718 mb at end-2019, the highest since April. This saw the long-short ratio climb back above the long run average of 6.3:1 for the first time since May. Combined net length in product futures rose to 207 mb on 31 December, the highest since October 2018, with ICE gasoil futures seeing the strongest gains.

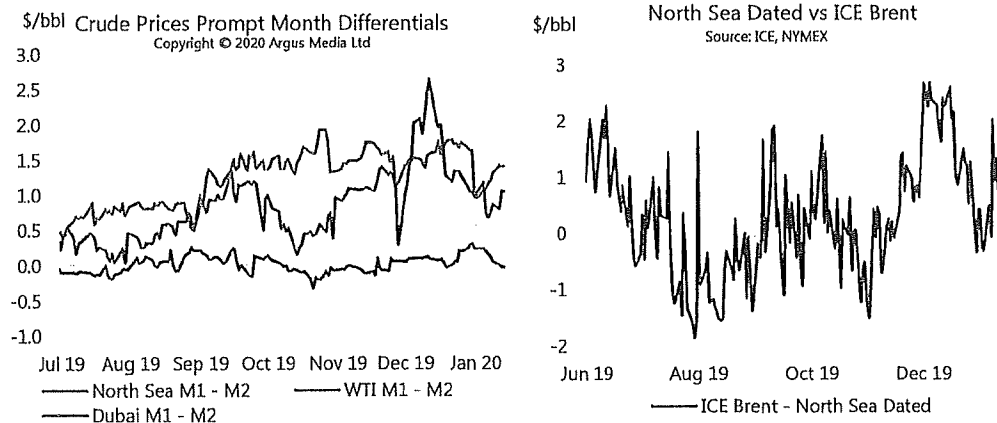
Oil Market Report

Prices



Spot crude oil prices

Physical markets for both sweet and sour crude continued to display signs of tightness in December. The prompt backwardation (month 1-month 2 spread) for North Sea Dated rose \$0.57/bbl, to average \$1.63/bbl. That for Dubai steepened, reaching \$1.78/bbl on 23 December then easing but remaining above \$1/bbl. Demand for sweet crude has benefited from the new IMO regulations while sanctions, OPEC cuts and supply disruptions have largely impacted sour crude supplies. Meanwhile, the structure on WTI remained relatively flat, albeit slightly more backwardated in December, as abundant regional supply weighed on demand tensions.

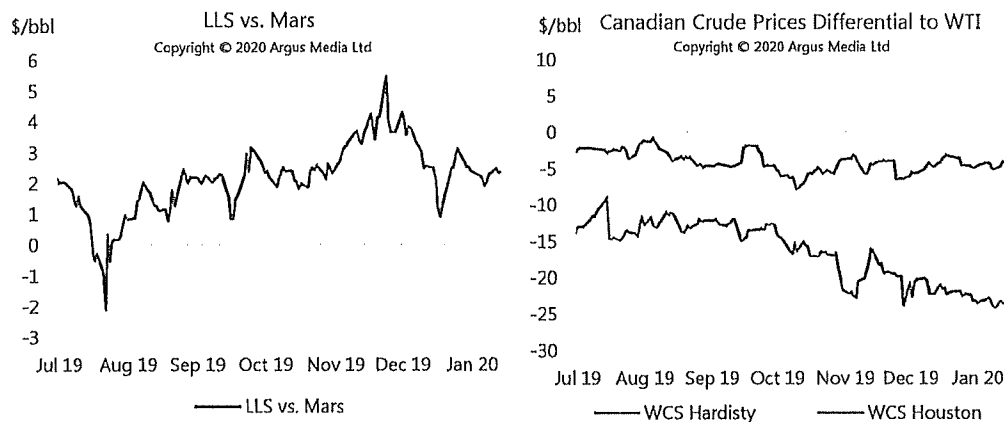


The premium of North Sea Dated to ICE Brent rose sharply from October into November, supported in part by a strong call on light sweet crude to meet demand for IMO compliant bunker fuels. The premium averaged \$1.71/bbl in December, up \$1.31/bbl m-o-m, highlighting the tight physical market. Physical markets eased in the final days of the year and North Sea Dated's price fell faster than did futures. The spread moved briefly into negative territory then spiked in January when the US hit Iranian forces in Iraq.

The attractiveness of US exports was boosted in December as the discount of WTI Houston to North Sea Dated and Dubai widened by \$1.25/bbl and \$0.48/bbl m-o-m, respectively. However, this was partly offset by rising freight rates. In a reversal to the trend in recent months, Mars

strengthened against Light Louisiana Sweet (LLS) in December following the news that OPEC+ would make deeper cuts as this will reduce the availability of sour crudes.

New pipeline infrastructure has eased the bottlenecks to transport crude from the Permian to the US Gulf Coast. This allowed WTI Midland to maintain a discount to WTI Houston of \$2.29/bbl in December which is significantly slimmer than the average of \$8.19/bbl seen in 1H19 before the new pipelines were commissioned.



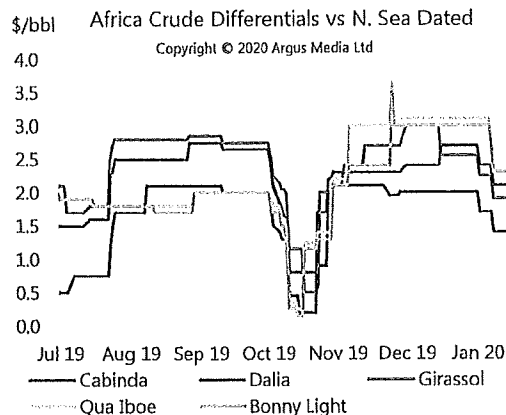
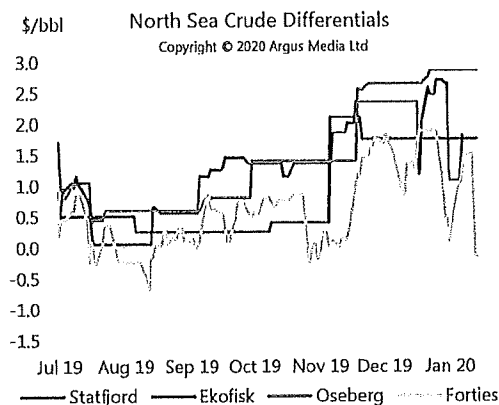
The discount of Western Canadian Select (WCS) priced in Hardisty vs WTI in Cushing widened by \$1.85/bbl to average \$21.63/bbl in December. Crude inventories built in Alberta due to a backlog of exports following the temporary closure of the Keystone pipeline in October (it was still operating at reduced rates in early January) and a rail strike in November. Producers continue to be subject to government-mandated output curbs which were introduced in early 2019 to ease pressure on export infrastructure. There are no new pipelines expected in 2020; however, operators have indicated that an additional 150 kb/d of capacity will be available thanks to optimisation work on the existing lines.

The prices of the grades underpinning the North Sea Dated benchmark rose in December thanks to robust demand for light sweet crude. Furthermore, the lower Brent-Dubai EFS enhanced the attractiveness of Brent-linked crudes in Asia Pacific. Differentials rose to multi-year highs in December, with the Forties and Ekofisk premia to North Sea Dated reaching \$1.89/bbl and \$2.70/bbl, respectively. However, loading programmes show increasing supplies of North Sea crudes in early 2020 which may pressure prices.

The IMO regulatory change has boosted demand for low-sulphur and middle-distillate grades from West Africa. In December, differentials remained at the exceptionally high levels seen in recent months, despite headwinds from higher freight rates. Furthermore, strengthening diesel cracks in Europe supported some middle distillate-rich Nigerian grades. Bonny Light and Forcados rose by \$0.52/bbl and \$0.61/bbl vs. North Sea Dated m-o-m, respectively. In early January, differentials for key Angolan and Nigerian crudes fell on lacklustre demand for February cargoes.

Oil Market Report

Prices



Spot Crude Oil Prices and Differentials (monthly and weekly averages, \$/bbl)										
	Oct	Nov	Dec	Dec-Nov Avg Chg	% Chg	Week Commencing:				
						09 Dec	16 Dec	23 Dec	30 Dec	06 Jan
Crudes										
North Sea Dated	59.73	63.11	66.83	3.72	5.9	66.45	67.81	68.58	67.20	67.53
Brent (Asia) Mth 1	59.36	62.48	65.79	3.31	5.3	64.79	66.78	68.26	68.72	69.03
WTI (Cushing) Mth 1	53.98	57.16	59.81	2.65	4.6	59.25	60.74	61.27	61.74	60.84
Urals (Mediterranean)	59.28	64.44	67.06	2.62	4.1	67.10	68.18	67.83	66.45	66.78
Dubai	59.36	61.91	64.86	2.95	4.8	63.98	66.06	67.10	67.12	67.65
Tapis (Dated)	66.01	70.21	74.22	4.01	5.7	73.55	75.03	76.36	74.90	75.23
Differential to North Sea Dated										
WTI (Cushing)	-5.75	-5.95	-7.02	-1.07		-7.19	-7.06	-7.31	-5.46	-6.69
Urals (Mediterranean)	-0.45	1.33	0.23	-1.10		0.65	0.37	-0.75	-0.75	-0.75
Dubai	-0.37	-1.20	-1.96	-0.77		-2.47	-1.75	-1.49	-0.08	0.12
Tapis (Dated)	6.27	7.10	7.40	0.30		7.10	7.22	7.77	7.70	7.70
Prompt Month Differential										
Forward Cash Brent Mth1-Mth2	0.55	1.09	1.66	0.57		2.23	1.79	1.26	1.05	0.84
Forward WTI Cushing Mth1-Mth2	-0.07	-0.04	0.10	0.14		0.10	0.05	0.11	0.25	0.15
Forward Dubai Mth1-Mth2	1.51	1.51	1.59	0.08		1.50	1.68	1.72	1.31	1.16

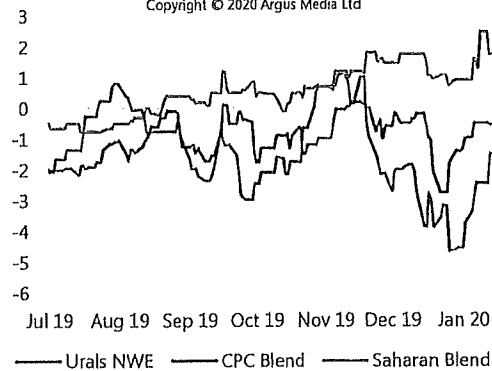
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Several factors pushed Urals in North West Europe to a discount of \$4.66/bbl vs. North Sea Dated on 27 December, the widest in over 11 years. Urals is a relatively high sulphur crude so prices have been volatile, with differentials at multi-year highs as recently as November, due to the impact of the upcoming IMO regulations. Along with the recent collapse in HSFO cracks, Urals prices were pressured by European refinery disruptions due to strikes and maintenance. In early January, Urals recovered on concerns about the security of sour supplies from the Middle East. CPC Blend slid \$0.66/bbl vs. North Sea Dated m-o-m in December, with prices holding up better than Urals thanks to its lower sulphur content and following reports that January exports would be lower than anticipated. Azeri Light and BTC Blend's premia to North Sea Dated fell by over \$3/bbl over December on weaker demand from Mediterranean refiners. Differentials recovered in early January. Saharan Blend's differential to North Sea Dated climbed to an eight year high in January thanks to healthy IMO-related demand for low sulphur supplies.

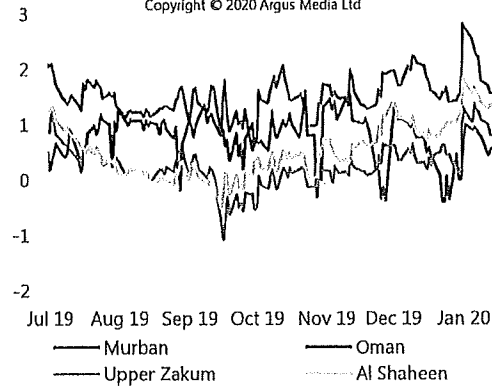
Steep backwardation of the Dubai curve held steady in December, with prompt crude priced at \$1.60/bbl above month 2 deliveries on average, suggesting a tight market for crude from the Middle East. In early January, the backwardation had eased to \$1.16/bbl on the expectation of higher crude availability from the region when refineries in Saudi Arabia and Abu Dhabi undergo maintenance in 1Q20.

Having reached an 11 month high of \$2.24/bbl vs. Dubai in mid-December thanks to stronger light and middle-distillate product cracks, Murban's differential eased over the course of the month. Qatar announced plans to move from retrospective to prospective price formulae for its major grades, while in turn Kuwait will switch the Oman component of its pricing formula from a Platts basis to the Dubai Mercantile Exchange. The changes take effect in early 2020.

\$/bbl Urals / Saharan/ CPC Blend Differentials
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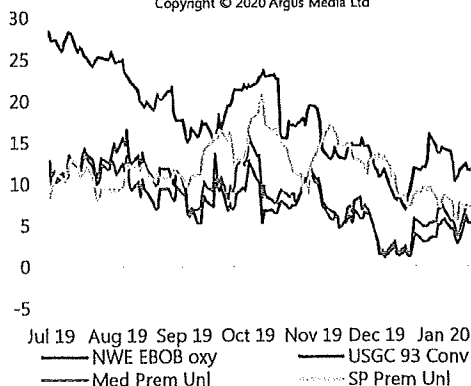
\$/bbl Middle Eastern Differentials vs Dubai
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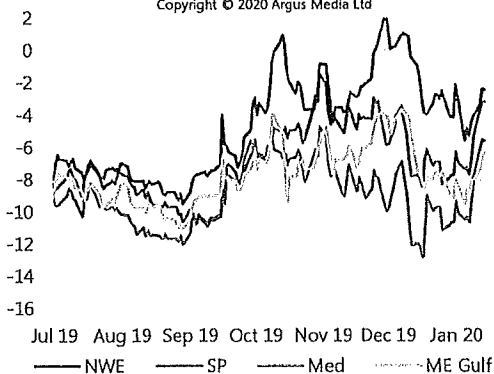
Spot product prices

Global gasoline cracks declined m-o-m in December, with prices pressured by seasonally weak demand and relatively high stocks in Europe and the US. In North West Europe, gasoline EBOB Oxy cracks fell by \$4.59/bbl vs. North Sea Dated and on the US Gulf Coast super unleaded gasoline cracks slipped by \$4.23/bbl vs. WTI Houston. Industrial action in France affected refining activity and gave prices a modest boost by early 2020. In Singapore, cracks for premium unleaded fell by \$4.24/bbl m-o-m vs. Dubai as new regional refinery output keeps the market well supplied. Furthermore, Chinese authorities allocated the first batch of product export quotas for 2020. These are 30% higher than the allocation made one year ago suggesting that Chinese supplies will continue to increase in 2020, although it is not known how many other quota allocations there will be in 2020.

\$/bbl Gasoline Cracks
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\$/bbl Naphtha Cracks
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Naphtha cracks in key markets slid during December after hitting multi-month highs early in the month. In Singapore, naphtha rose by \$0.92/bbl vs. Dubai thanks to demand from petrochemical facilities and amidst ongoing disruptions to supply from the Middle East, and particularly Saudi Arabia following the attacks in September. Furthermore, naphtha has become a more competitive feedstock as demand for alternative propane rose for heating in the northern hemisphere. In North West Europe and the Mediterranean naphtha cracks declined by \$2.60/bbl vs. North Sea Dated and \$2.26/bbl vs. Urals m-o-m, respectively, as weak petrochemical margins weighed on demand.

Spot Product Prices														
(monthly and weekly averages, \$/bbl)														
	Oct	Nov	Dec	Dec-Nov Chg	%	Week Commencing:					Oct	Nov	Dec	Chg
						09 Dec	16 Dec	23 Dec	30 Dec	06 Jan				
Rotterdam, Barges FOB											Differential to North Sea Dated			
Gasoline EBOB oxy	68.25	70.17	69.30	-0.87	-1.2	68.28	69.95	71.81	72.14	71.31	8.52	7.08	2.47	-4.59
Naphtha	54.53	59.25	60.37	1.12	1.9	60.90	60.38	61.10	59.92	60.67	-5.20	-3.86	-6.46	-2.60
Jet/Kerosene	78.74	77.67	79.12	1.45	1.9	77.44	81.00	81.56	81.75	79.98	19.01	14.56	12.30	-2.27
ULSD 10ppm	78.47	78.14	80.37	2.23	2.9	78.92	82.02	82.84	83.06	81.20	18.73	15.03	13.55	-1.48
Gasoil 0.1%	76.15	76.04	78.70	2.66	3.5	77.20	80.42	81.24	81.29	79.67	16.41	12.93	11.87	-1.05
VGO 2.0%	65.50	65.95	69.70	3.75	5.7	68.99	71.32	71.98	74.35	75.65	5.77	2.84	2.88	0.04
Fuel Oil 0.5%	73.58	73.30	82.22	8.92	12.2	79.10	85.84	88.12	88.58	87.28	13.85	10.19	15.39	5.20
LSFO 1%	60.94	60.71	67.23	6.52	10.7	64.66	69.33	70.95	72.59	76.63	1.20	-2.40	0.40	2.80
HSFO 3.5%	36.40	30.22	33.14	2.92	9.6	32.22	34.82	34.97	35.74	39.74	-23.34	-32.89	-33.69	-0.80
Mediterranean, FOB Cargoes											Differential to Urals			
Premium Unl 10 ppm	69.38	71.75	70.31	-1.44	-2.0	69.34	71.03	72.89	73.04	71.49	10.10	7.31	3.25	-4.06
Naphtha	52.79	56.62	56.88	0.36	0.6	57.70	56.72	57.54	58.16	57.10	-6.49	-7.82	-10.07	-2.26
Jet Aviation fuel	77.45	75.46	76.42	0.96	1.3	74.92	78.09	78.73	78.72	77.03	18.17	11.02	9.36	-1.66
ULSD 10ppm	78.17	77.35	79.23	1.89	2.4	77.89	80.64	81.49	81.49	79.40	18.89	12.91	12.18	-0.73
Gasoil 0.1%	76.42	75.87	77.96	2.09	2.8	76.82	79.40	80.17	80.23	78.64	17.14	11.44	10.91	-0.53
LSFO 1%	62.98	63.16	70.27	7.11	11.3	67.54	72.44	74.29	76.02	79.69	3.70	-1.28	3.21	4.49
HSFO 3.5%	41.86	30.22	33.62	3.40	11.2	32.59	35.33	35.70	36.52	40.26	-17.42	-34.22	-33.44	0.78
US Gulf, FOB Pipeline											Differential to WTI Houston			
Super Unleaded	76.96	75.62	73.85	-1.77	-2.3	71.47	73.11	77.33	79.10	75.95	20.15	15.02	10.79	-4.23
Unleaded	68.31	68.42	68.40	-0.02	0.0	67.06	68.70	72.06	71.22	69.60	11.50	7.82	5.33	-2.49
Jet/Kerosene	77.81	76.38	79.37	2.99	3.9	77.39	80.88	82.61	82.00	79.72	21.00	15.78	16.30	0.52
ULSD 10ppm	78.61	77.00	79.61	2.61	3.4	78.05	80.97	82.38	82.17	79.61	21.80	16.40	16.55	0.14
Heating Oil	74.37	71.94	74.82	2.88	4.0	74.26	75.73	76.33	76.69	75.67	17.56	11.34	11.76	0.42
No. 6 3%*	42.32	35.94	39.09	3.14	8.7	38.35	41.55	40.63	42.79	40.15	-14.48	-24.66	-23.98	0.68
Singapore, FOB Cargoes											Differential to Dubai			
Premium Unleaded	74.19	76.11	74.82	-1.30	-1.7	74.31	73.93	76.35	75.14	74.52	14.83	14.20	9.96	-4.24
Naphtha	57.14	59.76	63.62	3.87	6.5	64.63	63.33	64.16	63.82	62.78	-2.22	-2.16	-1.24	0.92
Jet/Kerosene	75.38	74.89	77.75	2.85	3.8	76.29	79.40	80.11	81.04	79.98	16.02	12.98	12.88	-0.10
Gasoil 0.001%	77.10	76.00	79.22	3.21	4.2	77.45	80.60	81.01	82.60	81.57	17.74	14.09	14.35	0.26
Fuel Oil 0.5%	74.56	76.76	88.26	11.50	15.0	84.37	91.14	93.89	98.22	97.80	15.20	14.84	23.39	8.55
LSWR Cracked	52.85	52.49	58.60	6.10	11.6	57.98	61.00	62.30	64.91	71.73	-6.51	-9.42	-6.27	3.15
HSFO 180 CST	47.75	39.34	43.23	3.89	9.9	42.69	45.53	46.87	49.72	56.08	-11.61	-22.57	-21.63	0.94
HSFO 380 CST 4%	47.00	38.81	41.87	3.06	7.9	41.23	43.90	45.85	48.19	53.36	-12.36	-23.11	-23.00	0.11

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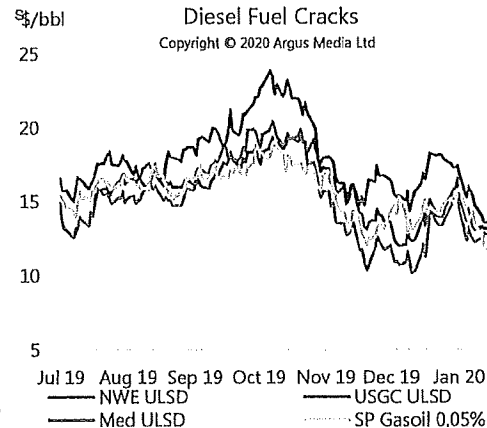
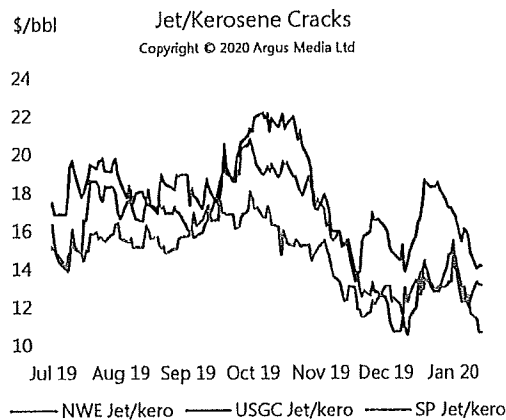
* Waterborne

Singapore cracks for jet/kerosene vs. Dubai held fairly steady in December as Japanese kerosene demand deteriorated due to mild winter weather. Refinery maintenance in the Middle East is expected to tighten the Asia Pacific market in early 2020. In North West Europe, cracks fell to a six month low of \$10.52/bbl on 12 December due to seasonally weak demand. Regional refinery disruptions including French strikes and maintenance in Germany and Italy gave a boost later in the month.

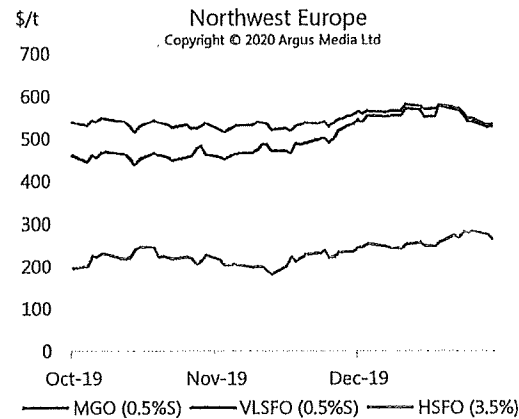
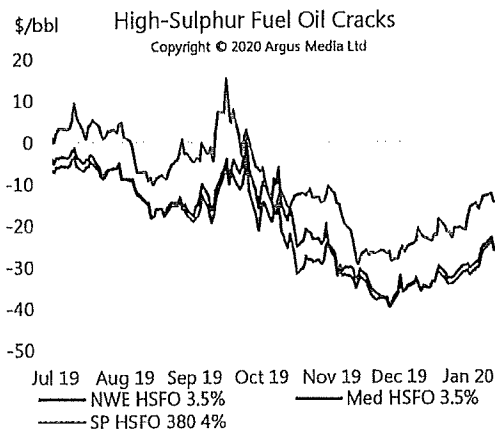
Cracks for ultra-low sulphur diesel (ULSD) fell in North West Europe and the Mediterranean by \$1.48/bbl vs. North Sea Dated and \$0.73/bbl vs. Urals, respectively. Markets seem comfortably supplied despite an IMO-related increase in demand for middle distillates. Strike action is hampering French refinery activity and this lent some support. However, Russian exports are

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scheduled to rise to multi-year highs in early 2020 which will keep the market well supplied. Cracks on the US Gulf Coast rose by \$0.14/bbl due to refinery outages and export demand and despite tepid domestic buying. Demand from India, where there is an extended refinery outage, supported the Asian market and cracks for gasoil in Singapore rose by \$0.26/bbl m-o-m. The market for vacuum gasoil (VGO) was boosted thanks to the IMO regulatory change with stronger demand for its use as a blendstock to make compliant marine fuel.



In December, there were signs of sustained demand for HSFO just ahead of the implementation of the new IMO regulations as ship operators took the last opportunity to use the cheaper fuel and complex refineries, particularly in the US and Mediterranean, continue to demand HSFO as feedstock. In Singapore, HSFO cracks rose by \$0.11/bbl vs. Dubai m-o-m, and they were \$10/bbl higher than cracks in North West Europe and the Mediterranean. This may be because a large number of Very Large Crude Carriers (VLCCs) refuel in Singapore, and many of these vessels have installed scrubbers that will allow them to continue to burn HSFO into 2020. Along with the IMO impact, which has seen HSFO cracks languish in November and December, there was also a seasonal decline in demand from the power sector in the Middle East.

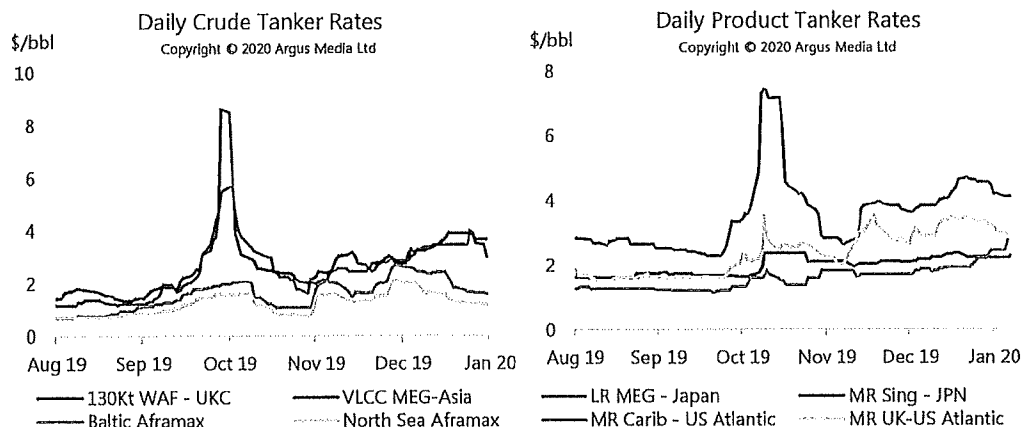


Cracks for IMO-compliant fuel strengthened in December as expected. In North West Europe and Singapore, 0.5% sulphur fuel oil rose by \$5.20/bbl vs. North Sea Dated and \$8.55/bb vs. Dubai m-o-m, respectively. As an indication of ship operator's growing preference for very low sulphur fuel oil (VLSFO), its price spread vs. marine gasoil (MGO) has narrowed to near zero in

North West Europe. MGO had previously carried a quality premium as a known and fungible fuel quality as compared to VLSFO for which ship operators had concerns about blending and performance.

Freight

The introduction of the IMO's new fuel regulations have unsurprisingly boosted freight rates since the spike in October. Crude tanker freight rates have risen more outside the Baltic and North Sea areas where operators were already using very low sulphur bunkers. Along with higher fuel costs, there have been reports of delays in obtaining fuel in major ports. This tightened ship availability as many vessels were unable to bid for cargoes until they had secured fuel. According to Gibson shipbrokers, as this report is published this factor is no longer impacting supply. Furthermore, escalating tensions in the Middle East Gulf have pushed up freight costs for ships travelling in the region, with insurance rates reported to have doubled since December. There were reports that Bahri Shipping (previously known as National Shipping Company of Saudi Arabia) briefly suspended movements through the Strait of Hormuz in early January. There was no significant market impact on this occasion but a repeat of this could significantly tighten markets and lead to higher rates.



Rates for VLCCs travelling between the Middle East Gulf (MEG) and Asia rose by \$0.56/bbl m-o-m, due to regional tensions and healthy demand. Likewise, Suezmaxes transporting crude between the UK-Continent and West Africa saw rates rise by \$0.72/bbl m-o-m. Aframax markets were more volatile, with freight rates in the North Sea and the Baltic rising in early December thanks to higher crude flows from Norway's Johan Sverdrup field and forecasts of delays caused by ice in the Baltic. Rates then eased on slower demand and as the weather was milder than expected.

In clean freight markets, rates for long range (LR) vessels transporting products between the Middle East and Asia rose by \$0.69/bbl m-o-m, while medium range (MR) ships travelling in the Atlantic Basin between the UK-Continent and US-Atlantic rose by \$0.40/bbl m-o-m.

Table 1
WORLD OIL SUPPLY AND DEMAND
(million barrels per day)

	2016	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
OECD DEMAND																	
Americas	24.9	25.1	25.3	25.3	25.9	25.6	25.5	25.4	25.4	25.9	25.8	25.6	25.3	25.6	26.2	26.1	25.8
Europe	14.0	14.4	14.1	14.2	14.7	14.1	14.3	13.9	14.1	14.6	14.2	14.2	14.0	14.2	14.6	14.3	14.3
Asia Oceania	8.1	8.2	8.7	7.7	7.8	8.1	8.1	8.3	7.5	7.6	8.2	7.9	8.4	7.5	7.6	8.2	7.9
Total OECD	47.1	47.6	48.0	47.3	48.3	47.8	47.9	47.7	47.0	48.1	48.2	47.7	47.7	47.4	48.4	48.6	48.0
NON-OECD DEMAND																	
FSU	4.4	4.5	4.5	4.6	4.9	4.8	4.7	4.6	4.7	5.0	4.9	4.8	4.7	4.8	5.1	5.0	4.9
Europe	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	12.0	12.5	12.7	13.0	13.1	13.1	13.0	13.0	13.7	13.8	13.9	13.6	13.5	14.2	14.3	14.2	14.0
Other Asia	13.2	13.7	14.1	14.3	13.7	14.1	14.0	14.5	14.3	13.8	14.5	14.3	14.9	14.7	14.1	15.0	14.7
Americas	6.5	6.4	6.3	6.3	6.5	6.4	6.4	6.2	6.3	6.4	6.4	6.4	6.2	6.4	6.5	6.5	6.4
Middle East	8.4	8.4	8.1	8.4	8.7	8.2	8.3	8.1	8.2	8.8	8.3	8.4	7.9	8.3	8.8	8.2	8.3
Africa	4.2	4.2	4.3	4.2	4.1	4.3	4.2	4.4	4.3	4.2	4.3	4.3	4.4	4.4	4.2	4.4	4.4
Total Non-OECD	49.3	50.6	50.7	51.6	51.7	51.7	51.4	51.7	52.4	52.8	53.2	52.5	52.4	53.6	53.8	54.0	53.4
Total Demand¹	96.4	98.2	98.7	98.9	100.0	99.6	99.3	99.3	99.4	100.8	101.4	100.3	100.1	100.9	102.1	102.6	101.6
OECD SUPPLY																	
Americas	19.6	20.5	22.0	22.3	23.5	24.3	23.0	24.1	24.5	24.6	25.3	24.6	25.5	25.8	26.1	26.4	25.9
Europe	3.5	3.5	3.6	3.4	3.3	3.5	3.5	3.5	3.2	3.2	3.5	3.3	3.7	3.8	3.7	3.9	3.8
Asia Oceania	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Total OECD⁴	23.5	24.4	26.0	26.1	27.3	28.2	26.9	28.0	28.2	28.3	29.4	28.5	29.8	30.2	30.3	30.8	30.3
NON-OECD SUPPLY																	
FSU	14.2	14.3	14.4	14.4	14.6	14.8	14.6	14.8	14.4	14.6	14.7	14.6	14.6	14.6	14.6	14.6	14.6
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.0	3.9	3.8	3.8	3.8	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Other Asia	3.6	3.5	3.4	3.4	3.3	3.3	3.4	3.3	3.2	3.1	3.2	3.2	3.2	3.1	3.1	3.1	3.1
Americas	4.5	4.6	4.5	4.6	4.4	4.6	4.5	4.5	4.6	4.9	5.0	4.7	5.0	5.1	5.2	5.2	5.1
Middle East	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.2	3.2	3.3
Africa	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4
Total Non-OECD⁴	31.0	30.9	30.9	31.0	31.0	31.6	31.1	31.4	31.0	31.3	31.6	31.3	31.4	31.4	31.5	31.6	31.5
Processing gains ²	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.4	2.5	2.1	2.8	3.1	2.5	2.6	2.3	2.9	3.2	2.7	2.8	2.4	3.0	3.3	2.9	2.9
Total Non-OPEC Supply	69.2	69.1	61.3	62.2	63.6	64.6	62.9	63.9	64.5	66.1	66.0	64.9	66.0	67.0	67.5	67.6	67.0
OPEC²																	
Crude	32.4	32.0	31.7	31.6	32.0	32.2	31.9	30.7	30.1	29.4	29.7	29.9					
NGLs	5.3	5.4	5.5	5.5	5.5	5.5	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Total OPEC	37.7	37.4	37.2	37.1	37.5	37.7	37.4	36.2	35.6	34.9	35.2	35.4					
Total Supply	96.9	97.5	98.5	99.3	101.2	102.2	100.3	100.1	100.0	100.0	101.2	100.3					
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.0	-0.4	-0.3	0.0	0.6	0.1	0.1	0.1	0.7	0.1							
Government	0.0	-0.1	0.0	0.0	0.0	-0.2	-0.1	0.1	-0.1	0.0							
Total	0.0	-0.5	-0.2	-0.1	0.6	-0.1	0.0	0.1	0.6	0.0							
Floating storage/Oil in transit	0.2	0.4	-1.0	0.3	-0.3	0.6	0.0	-0.3	-0.5	0.0							
Miscellaneous to balance ⁵	0.3	-0.6	1.0	0.2	0.9	2.2	1.0	0.9	0.5	-0.8							
Total Stock Ch. & Misc	0.5	-0.7	-0.2	0.4	1.2	2.7	1.0	0.8	0.6	-0.8	-0.3	0.1					
Memo Items:																	
Call on OPEC crude + Stock ch. ⁶	31.9	32.7	31.9	31.2	30.9	29.5	30.9	29.9	29.4	30.3	29.9	29.9	28.6	28.4	29.1	29.4	28.9

¹ Measured as deliveries from refineries and primary stocks, comprises inland deliveries, international marine bunkers, refinery fuel, crude for direct burning, oil from non-conventional sources and other sources of supply. Includes Biofuels.

² OPEC data based on today's membership throughout the time series.

³ Net volumetric gains and losses in the refining process and marine transportation losses.

⁴ Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.

⁵ Includes changes in non-reported stocks in OECD and non-OECD areas.

⁶ Equals the arithmetic difference between total demand minus total non-OPEC supply minus OPEC NGLs.

Table 1a
WORLD OIL SUPPLY AND DEMAND: CHANGES FROM LAST MONTH'S TABLE 1
(million barrels per day)

	2016	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	0.1	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1
Total OECD											-0.1			0.1	-0.1	-0.2	
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.1	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD									-0.1	0.2			0.1	0.1			
Total Demand									0.1	-0.1			0.1	0.2	-0.1	-0.2	
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	-	0.1	-	0.1	-	-0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD											0.1		0.1		-0.1		
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	0.1	-	-	-0.1	-	0.1	0.1	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD										0.1					0.1	0.1	
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	0.1	-0.1	-	-	0.1	0.1	0.1	0.1
Total Non-OPEC Supply										0.1	0.1		0.1		0.2	0.1	
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC																	
Total Supply																	
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total										0.1							
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous to balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc										0.1							
Memo Items:																	
Call on OPEC crude + Stock ch.	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-	0.1	-0.1	-0.3	-0.1

When submitting their monthly oil statistics, OECD Member countries periodically update data for prior periods. Similar updates to non-OECD data can occur.

Oil Market Report

Tables

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Demand (mb/d)																
Americas	25.07	25.31	25.33	25.86	25.60	25.53	25.40	25.41	25.87	25.82	25.63	25.34	25.62	26.17	26.09	25.81
Europe	14.38	14.07	14.23	14.66	14.11	14.27	13.93	14.07	14.56	14.24	14.20	13.99	14.21	14.59	14.34	14.28
Asia Oceania	8.16	8.66	7.74	7.76	8.10	8.08	8.34	7.50	7.65	8.18	7.91	8.39	7.52	7.61	8.18	7.93
Total OECD	47.61	48.04	47.30	48.28	47.81	47.88	47.67	46.98	48.08	48.24	47.74	47.72	47.35	48.37	48.61	48.02
Asia	26.21	26.78	27.25	26.80	27.23	27.01	27.57	28.02	27.57	28.36	27.88	28.37	28.94	28.40	29.15	28.72
Middle East	8.40	8.09	8.43	8.69	8.17	8.35	8.12	8.19	8.80	8.35	8.37	7.93	8.27	8.80	8.18	8.30
Americas	6.45	6.31	6.33	6.47	6.43	6.39	6.24	6.35	6.44	6.44	6.37	6.23	6.36	6.46	6.45	6.38
FSU	4.54	4.40	4.61	4.89	4.82	4.70	4.61	4.74	4.97	4.94	4.82	4.70	4.83	5.05	4.97	4.89
Africa	4.23	4.29	4.25	4.11	4.26	4.23	4.35	4.33	4.18	4.32	4.30	4.41	4.40	4.24	4.39	4.36
Europe	0.75	0.73	0.74	0.77	0.79	0.76	0.76	0.79	0.80	0.81	0.79	0.76	0.79	0.82	0.82	0.80
Total Non-OECD	50.58	50.71	51.61	51.73	51.69	51.44	51.66	52.43	52.76	53.21	52.52	52.41	53.59	53.77	53.97	53.44
World	98.19	98.75	98.91	100.01	99.50	99.30	99.33	99.41	100.83	101.45	100.26	100.13	100.94	102.14	102.58	101.46
of which: US\$0	19.96	20.35	20.30	20.71	20.59	20.50	20.31	20.35	20.68	20.71	20.51	20.25	20.57	20.97	20.92	20.68
Europe 5*	8.32	8.22	8.24	8.34	8.17	8.24	8.12	8.09	8.26	8.14	8.16	8.09	8.11	8.22	8.17	8.15
China	12.49	12.70	12.98	13.14	13.09	12.97	13.03	13.72	13.79	13.88	13.61	13.51	14.22	14.26	14.19	14.05
Japan	3.92	4.31	3.46	3.56	3.92	3.81	4.09	3.41	3.44	3.85	3.69	4.03	3.34	3.39	3.83	3.65
India	4.68	4.91	5.03	4.62	4.89	4.86	5.14	5.06	4.75	5.11	5.02	5.29	5.27	4.89	5.30	5.19
Russia	3.39	3.36	3.43	3.68	3.60	3.62	3.46	3.54	3.75	3.65	3.60	3.51	3.59	3.79	3.67	3.64
Brazil	3.03	2.97	2.94	3.10	3.11	3.03	3.01	3.05	3.16	3.19	3.10	3.03	3.10	3.18	3.21	3.13
Saudi Arabia	3.30	2.86	3.21	3.35	2.99	3.13	2.96	3.05	3.40	3.18	3.17	2.83	3.14	3.47	3.05	3.12
Canada	2.42	2.34	2.37	2.58	2.51	2.45	2.45	2.44	2.57	2.57	2.51	2.45	2.41	2.59	2.59	2.51
Korea	2.63	2.73	2.64	2.58	2.53	2.62	2.63	2.48	2.58	2.66	2.59	2.71	2.53	2.59	2.67	2.62
Mexico	2.02	1.91	1.94	1.89	1.80	1.89	1.93	1.94	1.93	1.84	1.91	1.91	1.95	1.93	1.87	1.92
Iran	1.92	1.98	1.98	1.98	1.98	1.98	1.99	1.94	1.94	1.92	1.95	1.97	1.91	1.90	1.88	1.91
Total	68.07	68.74	68.56	69.54	69.20	69.01	69.10	69.08	70.35	70.71	69.82	69.69	70.13	71.18	71.38	70.57
% of World	69.3%	69.6%	69.3%	69.5%	69.5%	69.5%	69.8%	69.5%	69.8%	69.7%	69.6%	69.6%	69.5%	69.7%	69.6%	69.6%
Annual Change (% per annum)																
Americas	0.7	2.8	0.8	2.8	1.0	1.8	0.4	0.3	0.0	0.9	0.4	-0.3	0.8	1.2	1.0	0.7
Europe	2.5	1.2	-0.8	-0.9	-2.5	-0.8	-1.0	-1.1	-0.7	1.0	-0.5	0.4	1.0	0.2	0.7	0.6
Asia Oceania	0.2	1.2	-0.4	-1.6	-3.7	-1.1	-3.7	-3.1	-1.4	0.9	-1.8	0.7	0.3	-0.4	0.0	0.2
Total OECD	1.2	2.0	0.1	0.9	-0.9	0.5	-0.8	-0.7	-0.4	0.9	-0.2	0.1	0.8	0.8	0.8	0.8
Asia	4.2	3.4	2.5	3.7	2.6	3.1	3.0	2.9	2.9	4.2	3.2	2.9	3.3	3.0	2.8	3.0
Middle East	0.3	-0.3	-1.5	-0.8	0.4	-0.6	0.3	-2.8	1.2	2.2	0.2	-2.2	0.9	0.1	-2.0	-0.8
Americas	-0.3	0.0	-1.5	-1.6	-0.6	-1.0	-1.0	0.2	-0.4	0.1	-0.3	-0.2	0.2	0.3	0.3	0.1
FSU	2.5	4.1	2.1	2.9	5.0	3.5	2.7	2.7	1.8	2.5	2.4	1.9	1.9	1.6	0.8	1.5
Africa	1.5	-0.6	-0.2	-0.8	1.0	-0.1	1.4	2.0	1.7	1.3	1.6	1.2	1.5	1.5	1.7	1.5
Europe	3.2	2.4	-1.0	1.3	4.5	1.8	3.2	6.2	3.7	1.9	3.7	1.0	0.5	1.6	1.9	1.3
Total Non-OECD	2.5	2.1	1.0	1.8	2.0	1.7	1.9	1.6	2.0	2.9	2.1	1.5	2.2	1.9	1.4	1.7
World	1.9	2.1	0.6	1.4	0.6	1.1	0.6	0.5	0.8	2.0	1.0	0.8	1.5	1.3	1.1	1.2
Annual Change (mb/d)																
Americas	0.18	0.69	0.20	0.70	0.25	0.46	0.09	0.07	0.01	0.22	0.10	-0.07	0.21	0.31	0.27	0.18
Europe	0.35	0.17	-0.12	-0.14	-0.37	-0.11	-0.14	-0.16	-0.10	0.13	-0.07	0.06	0.14	0.02	0.10	0.08
Asia Oceania	0.01	0.10	-0.03	-0.12	-0.31	-0.09	-0.32	-0.24	-0.11	0.08	-0.15	0.06	0.03	-0.03	0.00	0.01
Total OECD	0.54	0.96	0.05	0.44	-0.43	0.25	-0.37	-0.32	-0.20	0.43	-0.12	0.05	0.38	0.30	0.37	0.27
Asia	1.05	0.89	0.66	0.96	0.70	0.80	0.79	0.78	0.77	1.14	0.87	0.80	0.91	0.83	0.79	0.83
Middle East	0.03	-0.03	-0.13	-0.07	0.03	-0.05	0.02	-0.24	0.10	0.18	0.02	-0.18	0.07	0.00	-0.17	-0.07
Americas	-0.02	0.00	-0.10	-0.11	-0.04	-0.06	-0.05	0.02	-0.03	0.01	-0.02	-0.01	0.02	0.02	0.02	0.01
FSU	0.11	0.18	0.09	0.14	0.23	0.16	0.12	0.13	0.09	0.12	0.11	0.09	0.09	0.08	0.04	0.07
Africa	0.06	-0.02	-0.01	-0.03	0.04	-0.01	0.05	0.09	0.07	0.06	0.07	0.05	0.07	0.06	0.07	0.06
Europe	0.02	0.02	-0.01	0.01	0.03	0.01	0.02	0.05	0.03	0.01	0.03	0.01	0.00	0.01	0.02	0.01
Total Non-OECD	1.24	1.03	0.51	0.90	1.00	0.86	0.95	0.81	1.03	1.52	1.08	0.75	1.16	1.01	0.76	0.92
World	1.79	1.99	0.56	1.33	0.57	1.11	0.58	0.49	0.82	1.94	0.96	0.80	1.54	1.31	1.13	1.19
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	-0.13	-0.03	0.01	0.05	0.01	-0.03	0.01
Europe	0.00	0.01	0.03	0.01	0.02	0.02	0.02	0.02	0.00	0.03	0.02	0.02	0.04	-0.01	-0.03	0.01
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.03	-0.02	-0.07	-0.10	-0.05
Total OECD	0.00	0.01	0.03	0.01	0.02	0.02	0.02	0.03	-0.01	-0.16	-0.02	0.01	0.07	-0.07	-0.17	-0.04
Asia	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.06	0.07	0.00	0.07	0.10	-0.04	-0.01	0.03
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.14	0.04	-0.02	0.02	0.08	0.01	0.02
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	-0.02	-0.01	-0.01	0.00	-0.01
FSU	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.05	-0.03	-0.02	-0.01	-0.02	-0.05	-0.03	-0.03
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.04	0.01	0.00	0.00	0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	0.00	-0.00	-0.00	-0.01	-0.01	-0.01	0.04	-0.02	-0.07	0.19	0.04	0.08	0.09	-0.02	-0.03	0.02
World	0.00	0.00	0.02	0.00	0.01	0.01	0.06	0.02	-0.08	0.05	0.01	0.07	0.16	-0.09	-0.19	-0.01
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.00	0.02	0.00	0.01	0.01	0.06	-0.01	-0.08	0.04	0.00	0.00	0.14	-0.01	-0.24	-0.03

* France, Germany, Italy, Spain and UK

Table 2a
OECD REGIONAL OIL DEMAND¹
(million barrels per day)

	Latest month vs.									
	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19 ²	Sep 19 Oct 18
Americas										
LPG and ethane	3.39	3.69	3.78	4.17	3.40	3.54	3.40	3.62	3.85	0.22 0.27
Naphtha	0.31	0.31	0.33	0.30	0.28	0.27	0.27	0.28	0.21	-0.07 -0.14
Motor gasoline	11.08	11.09	11.04	10.71	11.26	11.28	11.63	10.91	11.07	0.16 -0.08
Jet and kerosene	1.98	2.03	2.01	1.97	2.10	2.17	2.24	2.05	2.08	0.04 0.10
Gasoil/diesel oil	5.07	5.23	5.31	5.37	5.08	5.05	5.14	5.00	5.33	0.33 -0.24
Residual fuel oil	0.66	0.61	0.60	0.62	0.60	0.64	0.70	0.55	0.61	0.06 0.04
Other products	2.51	2.48	2.44	2.18	2.61	2.83	2.93	2.76	2.71	-0.05 0.00
Total	25.07	25.53	25.60	25.40	25.41	25.87	26.39	25.26	25.95	0.69 -0.04
Europe										
LPG and ethane	1.15	1.16	1.11	1.12	1.09	1.07	1.08	1.02	0.98	-0.03 -0.09
Naphtha	1.13	1.03	0.93	1.13	0.88	0.92	0.96	0.85	0.93	0.07 0.04
Motor gasoline	1.99	1.99	1.97	1.88	2.09	2.13	2.13	2.07	2.06	0.00 0.10
Jet and kerosene	1.45	1.51	1.44	1.38	1.58	1.72	1.73	1.73	1.61	-0.11 0.03
Gasoil/diesel oil	6.48	6.44	6.57	6.41	6.30	6.60	6.41	6.66	6.74	0.07 -0.06
Residual fuel oil	0.89	0.86	0.84	0.88	0.85	0.83	0.84	0.80	0.75	-0.05 -0.10
Other products	1.29	1.28	1.26	1.13	1.28	1.30	1.24	1.34	1.27	-0.07 -0.15
Total	14.38	14.27	14.11	13.93	14.07	14.56	14.40	14.47	14.35	-0.12 -0.22
Asia Oceania										
LPG and ethane	0.76	0.75	0.73	0.85	0.72	0.71	0.70	0.68	0.73	0.05 0.07
Naphtha	2.08	2.04	2.07	2.10	1.91	2.03	2.06	2.00	1.88	-0.12 -0.14
Motor gasoline	1.54	1.53	1.52	1.47	1.47	1.57	1.67	1.53	1.45	-0.08 0.00
Jet and kerosene	0.93	0.93	1.02	1.15	0.78	0.74	0.72	0.80	0.81	0.01 -0.05
Gasoil/diesel oil	1.90	1.89	1.93	1.94	1.88	1.85	1.91	1.79	1.89	0.10 0.06
Residual fuel oil	0.54	0.53	0.51	0.50	0.41	0.40	0.41	0.39	0.41	0.03 -0.11
Other products	0.40	0.40	0.33	0.32	0.34	0.34	0.29	0.39	0.33	-0.06 0.01
Total	8.15	8.06	8.10	8.34	7.50	7.65	7.76	7.57	7.50	-0.07 -0.16
OECD										
LPG and ethane	5.30	5.60	5.62	6.14	5.21	5.32	5.18	5.32	5.56	0.24 0.26
Naphtha	3.52	3.39	3.33	3.54	3.07	3.22	3.29	3.13	3.02	-0.11 -0.24
Motor gasoline	14.62	14.61	14.52	14.06	14.81	14.98	15.43	14.50	14.58	0.08 0.01
Jet and kerosene	4.35	4.46	4.47	4.50	4.45	4.63	4.70	4.57	4.51	-0.06 0.09
Gasoil/diesel oil	13.45	13.55	13.80	13.72	13.25	13.50	13.46	13.45	13.95	0.50 -0.25
Residual fuel oil	2.09	2.00	1.94	1.99	1.86	1.87	1.95	1.74	1.78	0.03 -0.16
Other products	4.20	4.16	4.03	3.63	4.23	4.47	4.45	4.49	4.31	-0.18 -0.14
Total	47.61	47.86	47.81	47.67	46.98	48.08	48.55	47.30	47.80	0.50 -0.42

¹ Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils.

North America comprises US 50 states, US territories, Mexico and Canada.

² Latest official OECD submissions (MOS).

Oil Market Report

Tables

Table 2b
OIL DEMAND IN SELECTED OECD COUNTRIES¹
(million barrels per day)

	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19 ²	Latest month vs.	
United States³											
LPG and ethane	2.54	2.87	3.02	3.29	2.60	2.71	2.54	2.83	2.99	0.16	0.22
Naphtha	0.23	0.23	0.24	0.21	0.21	0.22	0.23	0.23	0.14	-0.09	-0.13
Motor gasoline	9.33	9.33	9.25	8.96	9.48	9.49	9.82	9.17	9.34	0.17	0.04
Jet and kerosene	1.69	1.71	1.70	1.66	1.78	1.80	1.85	1.70	1.73	0.03	0.05
Gasol/diesel oil	3.85	4.05	4.10	4.18	3.92	3.85	3.91	3.83	4.13	0.30	-0.12
Residual fuel oil	0.34	0.32	0.33	0.29	0.26	0.32	0.34	0.27	0.32	0.05	0.05
Other products	1.80	1.89	1.88	1.62	2.02	2.20	2.28	2.12	2.03	-0.09	-0.07
Total	19.96	20.50	20.59	20.31	20.36	20.68	21.06	20.22	20.77	0.55	0.03
Japan											
LPG and ethane	0.41	0.40	0.39	0.47	0.35	0.29	0.28	0.27	0.30	0.03	-0.04
Naphtha	0.78	0.74	0.80	0.80	0.69	0.71	0.73	0.69	0.72	0.02	-0.07
Motor gasoline	0.87	0.86	0.85	0.81	0.81	0.90	0.96	0.80	0.78	-0.11	-0.04
Jet and kerosene	0.52	0.50	0.57	0.69	0.37	0.34	0.32	0.38	0.39	0.01	-0.04
Diesel	0.44	0.46	0.49	0.47	0.45	0.47	0.46	0.48	0.47	-0.01	-0.02
Other gasoil	0.34	0.32	0.32	0.35	0.28	0.27	0.26	0.27	0.28	0.01	-0.01
Residual fuel oil	0.28	0.28	0.27	0.26	0.21	0.23	0.23	0.24	0.24	0.00	-0.05
Other products	0.28	0.26	0.23	0.26	0.23	0.24	0.21	0.26	0.19	-0.07	-0.03
Total	3.92	3.81	3.92	4.09	3.41	3.44	3.44	3.49	3.36	-0.12	-0.29
Germany											
LPG and ethane	0.13	0.11	0.09	0.12	0.13	0.13	0.13	0.11	0.11	-0.01	0.02
Naphtha	0.30	0.27	0.23	0.33	0.22	0.22	0.24	0.18	0.28	0.10	0.07
Motor gasoline	0.50	0.49	0.48	0.47	0.50	0.51	0.52	0.50	0.51	0.02	0.04
Jet and kerosene	0.22	0.22	0.22	0.20	0.23	0.23	0.24	0.24	0.24	0.00	0.01
Diesel	0.78	0.76	0.77	0.74	0.78	0.79	0.78	0.78	0.81	0.03	0.01
Other gasoil	0.36	0.32	0.35	0.41	0.29	0.35	0.35	0.35	0.34	-0.01	-0.04
Residual fuel oil	0.07	0.06	0.05	0.03	0.05	0.05	0.06	0.04	0.05	0.00	0.00
Other products	0.10	0.11	0.13	0.08	0.10	0.12	0.11	0.12	0.10	-0.02	-0.05
Total	2.45	2.36	2.32	2.42	2.31	2.41	2.42	2.33	2.43	0.11	0.06
Italy											
LPG and ethane	0.10	0.10	0.10	0.09	0.07	0.07	0.06	0.07	0.07	0.00	-0.02
Naphtha	0.12	0.13	0.11	0.08	0.08	0.09	0.09	0.09	0.09	0.01	-0.01
Motor gasoline	0.17	0.17	0.16	0.14	0.16	0.16	0.14	0.17	0.17	0.00	0.00
Jet and kerosene	0.10	0.11	0.10	0.08	0.11	0.13	0.14	0.13	0.12	-0.01	0.01
Diesel	0.45	0.46	0.47	0.45	0.45	0.45	0.42	0.46	0.49	0.03	0.00
Other gasoil	0.08	0.08	0.08	0.06	0.06	0.07	0.06	0.08	0.09	0.01	-0.01
Residual fuel oil	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.00	0.00
Other products	0.15	0.16	0.17	0.14	0.16	0.16	0.14	0.17	0.16	-0.01	-0.02
Total	1.24	1.27	1.26	1.10	1.17	1.21	1.13	1.24	1.26	0.03	-0.05
France											
LPG and ethane	0.12	0.13	0.12	0.15	0.12	0.11	0.12	0.11	0.12	0.01	0.00
Naphtha	0.12	0.10	0.07	0.14	0.11	0.11	0.12	0.09	0.07	-0.02	0.00
Motor gasoline	0.18	0.19	0.19	0.18	0.21	0.22	0.22	0.21	0.21	0.00	0.01
Jet and kerosene	0.16	0.17	0.16	0.16	0.18	0.19	0.19	0.19	0.17	-0.02	-0.01
Diesel	0.72	0.71	0.72	0.68	0.71	0.71	0.66	0.70	0.73	0.03	-0.03
Other gasoil	0.25	0.24	0.25	0.26	0.20	0.24	0.21	0.29	0.24	-0.05	-0.05
Residual fuel oil	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.03	-0.02	-0.02
Other products	0.12	0.12	0.13	0.10	0.12	0.14	0.12	0.14	0.12	-0.02	-0.04
Total	1.74	1.71	1.69	1.72	1.71	1.78	1.69	1.78	1.69	-0.09	-0.14
United Kingdom											
LPG and ethane	0.14	0.14	0.14	0.14	0.14	0.10	0.09	0.07	0.06	-0.02	-0.08
Naphtha	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.02	-0.01	0.00
Motor gasoline	0.29	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.28	-0.01	0.02
Jet and kerosene	0.32	0.32	0.31	0.33	0.32	0.33	0.33	0.34	0.33	-0.01	0.01
Diesel	0.52	0.52	0.52	0.51	0.52	0.51	0.52	0.52	0.50	-0.02	0.01
Other gasoil	0.14	0.14	0.14	0.12	0.13	0.14	0.15	0.13	0.12	-0.01	-0.01
Residual fuel oil	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00
Other products	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.10	-0.02	-0.01
Total	1.60	1.57	1.56	1.55	1.57	1.53	1.53	1.53	1.43	-0.11	-0.07
Canada											
LPG and ethane	0.40	0.39	0.35	0.42	0.42	0.42	0.44	0.39	0.43	0.03	0.04
Naphtha	0.05	0.05	0.05	0.05	0.03	0.01	0.01	0.01	0.02	0.01	-0.03
Motor gasoline	0.84	0.88	0.91	0.85	0.89	0.91	0.92	0.90	0.86	-0.04	-0.12
Jet and kerosene	0.14	0.16	0.16	0.16	0.17	0.23	0.25	0.23	0.22	-0.01	0.06
Diesel	0.29	0.26	0.25	0.26	0.26	0.26	0.26	0.26	0.26	-0.01	0.01
Other gasoil	0.27	0.29	0.34	0.29	0.25	0.30	0.32	0.30	0.31	0.01	-0.10
Residual fuel oil	0.05	0.05	0.06	0.07	0.06	0.05	0.07	0.03	0.06	0.03	0.01
Other products	0.37	0.38	0.38	0.34	0.37	0.39	0.40	0.41	0.44	0.03	0.05
Total	2.42	2.45	2.51	2.45	2.44	2.57	2.67	2.53	2.58	0.05	-0.07

¹ Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils.

² Latest official OECD submissions (MOS).

³ US figures exclude US territories.

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Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2018	2019	2020	3Q19	4Q19	1Q20	2Q20	3Q20	Oct 19	Nov 19	Dec 19
OPEC											
Crude Oil											
Saudi Arabia	10.33	9.81		9.49	9.92				10.20	9.88	9.68
Iran	3.58	2.36		2.19	2.13				2.15	2.13	2.11
Iraq	4.57	4.71		4.79	4.64				4.69	4.65	4.59
UAE	3.00	3.08		3.08	3.09				3.09	3.10	3.07
Kuwait	2.75	2.68		2.65	2.68				2.63	2.71	2.71
Neutral Zone ¹	0.00	0.00		0.00	0.00				0.00	0.00	0.00
Angola	1.49	1.39		1.35	1.35				1.37	1.28	1.41
Nigeria	1.60	1.74		1.81	1.71				1.78	1.70	1.66
Libya	0.97	1.09		1.09	1.15				1.16	1.16	1.14
Algeria	1.04	1.02		1.02	1.02				1.02	1.03	1.02
Congo	0.32	0.34		0.34	0.34				0.32	0.34	0.35
Gabon	0.19	0.21		0.21	0.21				0.21	0.20	0.21
Equatorial Guinea	0.12	0.11		0.11	0.11				0.12	0.10	0.12
Ecuador	0.52	0.53		0.55	0.52				0.47	0.55	0.55
Venezuela	1.40	0.87		0.75	0.77				0.70	0.79	0.82
Total Crude Oil	31.88	29.95		29.42	29.68				29.91	29.62	29.44
Total NGLs²	5.50	5.49	5.54	5.45	5.50	5.54	5.54	5.54	5.50	5.50	5.50
Total OPEC³	37.38	35.44		34.87	35.16				35.41	35.12	34.94
NON-OPEC⁴											
OECD											
Americas	23.03	24.53	25.94	24.64	25.31	25.51	25.81	26.05	25.24	25.44	25.24
United States	15.54	17.17	18.28	17.19	17.76	17.79	18.22	18.42	17.83	17.80	17.65
Mexico	2.07	1.93	1.98	1.94	1.95	1.97	1.97	1.98	1.91	1.95	1.97
Canada	5.41	5.53	5.67	5.51	5.59	5.74	5.61	5.64	5.48	5.58	5.61
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.46	3.33	3.77	3.10	3.51	3.75	3.76	3.69	3.29	3.59	3.64
UK	1.11	1.13	1.21	1.07	1.13	1.23	1.19	1.16	1.06	1.14	1.20
Norway	1.85	1.73	2.12	1.65	1.93	2.08	2.13	2.09	1.78	2.02	2.01
Others	0.50	0.46	0.44	0.45	0.44	0.44	0.44	0.44	0.45	0.44	0.44
Asia Oceania	0.41	0.50	0.58	0.51	0.56	0.57	0.58	0.59	0.54	0.57	0.57
Australia	0.34	0.43	0.52	0.44	0.49	0.61	0.62	0.63	0.48	0.50	0.50
Others	0.07	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.06	0.07	0.07
Total OECD	26.90	28.46	30.29	28.32	29.37	29.84	30.16	30.34	29.07	29.60	29.45
NON-OECD											
Former USSR	14.58	14.63	14.80	14.82	14.68	14.63	14.57	14.59	14.60	14.72	14.73
Russia	11.49	11.58	11.52	11.57	11.59	11.51	11.52	11.52	11.57	11.59	11.60
Others	3.07	3.05	3.09	3.04	3.10	3.12	3.08	3.07	3.03	3.13	3.13
Asia	7.17	7.09	6.99	6.97	7.06	7.02	7.01	6.96	7.06	7.07	7.04
China	3.81	3.88	3.87	3.88	3.87	3.86	3.89	3.86	3.86	3.89	3.87
Malaysia	0.71	0.67	0.69	0.60	0.70	0.69	0.69	0.69	0.69	0.70	0.70
India	0.84	0.80	0.77	0.79	0.79	0.78	0.77	0.77	0.79	0.78	0.78
Indonesia	0.80	0.75	0.71	0.73	0.73	0.73	0.72	0.71	0.74	0.74	0.73
Others	1.01	0.98	0.94	0.97	0.97	0.95	0.94	0.93	0.98	0.96	0.95
Europe	0.12	0.12	0.11	0.12	0.12	0.12	0.11	0.11	0.12	0.12	0.12
Americas	4.52	4.74	5.10	4.85	5.02	4.96	5.06	5.16	4.92	5.05	5.10
Brazil	2.71	2.90	3.21	3.01	3.18	3.11	3.18	3.27	3.08	3.21	3.26
Argentina	0.58	0.60	0.61	0.61	0.60	0.60	0.60	0.61	0.61	0.61	0.60
Colombia	0.87	0.89	0.86	0.88	0.88	0.87	0.88	0.88	0.89	0.88	0.88
Others	0.36	0.35	0.42	0.35	0.36	0.38	0.40	0.43	0.35	0.36	0.36
Middle East	3.28	3.24	3.25	3.24	3.24	3.28	3.25	3.25	3.25	3.24	3.24
Oman	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.97	0.98	0.98	0.98
Qatar	1.97	1.96	1.97	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.96
Syria	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Yemen	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Others	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.21	0.21
Africa	1.45	1.47	1.43	1.46	1.47	1.45	1.44	1.42	1.46	1.47	1.48
Egypt	0.65	0.63	0.60	0.63	0.62	0.61	0.61	0.60	0.62	0.62	0.62
Others	0.80	0.84	0.83	0.83	0.85	0.84	0.83	0.82	0.84	0.85	0.85
Total Non-OECD	31.09	31.30	31.48	31.25	31.59	31.44	31.46	31.49	31.41	31.67	31.69
Processing gains⁵	2.32	2.35	2.38	2.35	2.35	2.38	2.38	2.38	2.35	2.35	2.35
Global Biofuels	2.63	2.79	2.88	3.21	2.72	2.36	2.99	3.28	3.13	2.76	2.28
TOTAL NON-OPEC	62.93	64.90	67.03	65.13	66.03	66.02	66.97	67.49	65.95	66.38	65.78
TOTAL SUPPLY	100.31	100.34		100.00	101.19				101.37	101.50	100.72

¹ Neutral Zone production is also included in Saudi Arabia and Kuwait production with their respective shares.

² Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. NGLs in Qatar and Nigeria and non-oil inputs to Saudi Arabian MTBE.

³ OPEC data based on today's membership throughout the time series.

⁴ Comprises crude oil, condensates, NGLs and oil from non-conventional sources.

⁵ Net volumetric gains and losses in refining and marine transportation losses.

Table 3a
OIL SUPPLY IN OECD COUNTRIES¹
 (thousand of barrels per day)

	2018	2019	2020	3Q19	4Q19	1Q20	2Q20	3Q20	Oct 19	Nov 19	Dec 19
United States											
Alaska	479	465	446	426	477	474	453	397	470	482	480
California	477	456	436	454	446	442	438	434	444	447	446
Texas	4408	5055	5508	5146	5256	5294	5447	5580	5273	5253	5240
Federal Gulf of Mexico ²	1758	1882	2016	1815	1934	1984	2023	2034	1904	1953	1948
Other US Lower 48	3889	4345	4555	4386	4553	4443	4528	4608	4560	4548	4553
NGLs ³	4369	4798	5142	4786	4930	4998	5147	5196	5022	4952	4816
Other Hydrocarbons	178	169	174	184	167	156	186	176	162	168	172
Total	16537	17171	18277	17188	17763	17790	18220	18422	17834	17803	17654
Canada											
Alberta Light/Medium/Heavy	489	485	489	480	489	489	489	489	486	495	486
Alberta Bitumen	1856	1833	1985	1856	1957	1949	1915	2053	1988	1962	1922
Saskatchewan	488	480	460	473	475	468	462	457	479	473	472
Other Crude	449	489	471	431	540	446	526	409	540	563	517
NGLs	904	968	996	945	987	1021	976	972	944	1003	1013
Other Upgraders	164	170	171	178	153	184	166	170	140	159	161
Synthetic Crudes	1056	1099	1102	1144	986	1183	1072	1093	902	1024	1035
Total	5408	5625	5673	5507	6587	6741	6607	6643	6478	6679	6607
Mexico											
Crude	1831	1705	1767	1718	1723	1752	1762	1772	1690	1733	1747
NGLs	236	217	205	214	218	213	208	203	219	214	220
Total	2073	1927	1977	1937	1946	1969	1974	1979	1914	1952	1971
UK											
Brent Fields	46	44	39	41	42	39	43	36	48	39	40
Forties Fields	355	323	287	273	308	322	246	278	263	330	333
Ninian Fields	34	38	37	39	40	39	38	37	38	41	40
Fliota Fields	65	57	58	53	61	60	58	58	62	60	61
Other Fields	519	575	695	586	583	675	710	660	556	585	628
NGLs	89	97	94	91	96	96	94	93	94	100	96
Total	1108	1134	1210	1066	1131	1231	1190	1162	1081	1135	1198
Norway⁵											
Ekofisk-Ula Area	145	139	156	160	145	154	154	149	152	153	131
Oseberg-Troll Area	251	261	280	263	269	274	279	277	267	269	272
Statfjord-Gullfaks Area	305	236	219	240	226	225	222	212	219	232	227
Hallenbanken Area	331	287	324	275	310	323	322	314	318	306	306
Sleipner-Frigg Area	403	424	785	347	608	741	796	794	458	659	709
Other Fields	79	84	88	82	98	89	83	82	90	118	85
NGLs	335	299	267	279	276	276	272	259	275	277	275
Total	1850	1731	2119	1646	1933	2084	2129	2086	1780	2016	2007
Other OECD Europe											
Denmark	114	101	74	96	79	77	75	73	83	74	80
Italy	89	77	89	74	72	77	85	93	72	72	71
Turkey	55	58	59	59	59	59	59	59	59	59	59
Other	117	105	102	93	108	105	103	100	112	107	105
NGLs	11	8	6	6	7	6	6	6	7	6	6
Non-Conventional Oils	112	114	111	120	116	111	111	111	113	119	116
Total	499	482	441	450	441	435	439	442	447	438	437
Australia											
Gippsland Basin	13	8	7	8	8	8	7	7	8	8	8
Cooper-Eromanga Basin	30	34	32	33	33	32	32	31	33	33	33
Carnarvon Basin	60	70	105	72	95	100	107	106	96	92	96
Other Crude	180	256	291	261	289	289	288	294	280	294	294
NGLs	59	60	86	64	69	82	85	88	63	71	73
Total	342	427	520	439	493	510	519	527	479	498	503
Other OECD Asia Oceania											
New Zealand	24	24	21	26	22	22	21	21	22	22	22
Japan	3	4	4	4	4	4	4	4	4	4	4
NGLs	13	12	11	12	11	11	11	11	11	11	11
Non-Conventional Oils	29	29	28	34	27	28	28	28	23	30	28
Total	69	69	64	76	65	65	64	64	61	68	66
OECD											
Crude Oil	19328	20404	21886	20258	21315	21458	21776	21918	21077	21453	21419
NGLs	6023	6467	6815	6416	6801	6711	6807	6836	6644	6641	6519
Non-Conventional Oils ⁴	1544	1586	1591	1644	1454	1668	1569	1583	1344	1505	1515
Total	26896	28458	30292	28318	29370	29836	30162	30336	29066	29599	29453

¹ Subcategories refer to crude oil only unless otherwise noted.

² Only production from Federal waters is included.

³ To the extent possible, condensates from natural gas processing plants are included with NGLs, while field condensates are counted as crude oil.

⁴ Does not include bitumen.

⁵ North Sea production is grouped by area including all fields being processed through the named field complex, ie, not just the field of that name.

⁶ Other North Sea NGLs is included.

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ²					PRIOR YEARS' STOCKS ²			STOCK CHANGES			
	In Million Barrels					In Million Barrels			In mb/d			
	Jul2019	Aug2019	Sep2019	Oct2019	Nov2019*	Nov2016	Nov2017	Nov2018	4Q2018	1Q2019	2Q2019	3Q2019
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	595.7	583.5	582.0	604.2	604.7	647.9	610.4	611.3	0.35	0.11	0.01	-0.37
Motor Gasoline	261.0	250.5	257.8	249.8	263.5	265.4	254.3	257.8	0.09	-0.14	-0.07	-0.02
Middle Distillate	209.2	208.1	202.4	183.9	184.7	235.5	203.1	194.0	0.01	-0.12	-0.05	0.02
Residual Fuel Oil	36.3	34.2	35.7	35.8	37.0	47.7	35.7	35.1	-0.01	-0.01	0.02	0.00
Total Products ³	762.6	767.3	765.0	727.6	721.4	788.7	720.7	718.6	-0.17	-0.41	0.37	0.23
Total ⁴	1568.6	1564.4	1558.8	1548.6	1535.9	1626.4	1524.1	1528.1	0.01	-0.35	0.62	-0.06
OECD Europe												
Crude	359.3	360.1	355.5	358.2	362.0	346.5	348.8	338.8	-0.02	0.33	-0.02	-0.07
Motor Gasoline	87.7	87.4	85.9	87.2	88.8	94.5	92.9	88.3	0.10	0.06	-0.10	-0.04
Middle Distillate	278.1	288.5	279.6	266.6	269.1	314.4	267.4	239.6	-0.11	0.13	0.09	0.04
Residual Fuel Oil	60.7	63.7	64.7	65.5	64.8	70.4	61.2	56.3	-0.02	0.06	0.00	0.06
Total Products ³	540.4	553.6	547.7	530.8	532.4	580.7	534.7	496.9	-0.06	0.28	0.00	0.07
Total ⁴	986.2	999.8	987.2	973.2	979.8	1001.2	958.3	915.6	-0.03	0.66	-0.05	0.02
OECD Asia Oceania												
Crude	158.8	159.9	142.3	146.1	151.8	194.6	188.0	180.7	0.16	0.04	-0.07	-0.11
Motor Gasoline	26.6	24.4	25.4	24.8	25.5	22.7	23.4	24.8	0.00	0.02	-0.01	0.01
Middle Distillate	71.7	77.0	70.6	73.1	74.7	65.0	65.5	77.8	-0.04	-0.07	0.03	0.10
Residual Fuel Oil	18.9	19.8	21.0	20.1	18.9	19.6	20.5	19.2	0.01	-0.01	0.00	0.01
Total Products ³	176.1	190.7	191.9	182.0	179.4	171.1	175.7	187.9	-0.04	-0.18	0.10	0.20
Total ⁴	401.7	416.8	398.6	394.8	396.0	429.1	426.4	416.9	0.11	-0.23	0.10	0.10
Total OECD												
Crude	1113.8	1103.5	1079.7	1108.5	1118.5	1188.9	1147.2	1110.8	0.50	0.48	-0.08	-0.55
Motor Gasoline	375.2	370.4	369.2	361.8	377.8	382.6	370.6	370.8	0.19	-0.06	-0.19	-0.05
Middle Distillate	558.9	573.5	560.6	523.6	528.5	614.8	536.1	511.3	-0.14	-0.06	0.07	0.16
Residual Fuel Oil	115.9	117.7	121.5	121.3	120.7	137.6	117.4	110.7	-0.02	0.04	0.02	0.08
Total Products ³	1482.1	1511.6	1504.6	1440.5	1433.2	1540.5	1431.1	1403.4	-0.27	-0.31	0.47	0.50
Total ⁴	2958.5	2981.1	2944.6	2914.6	2911.7	3055.7	2908.8	2859.6	0.09	0.08	0.68	0.06
OECD GOVERNMENT-CONTROLLED STOCKS⁵												
OECD Americas												
Crude	644.8	644.8	644.8	641.2	635.3	695.1	681.3	649.6	-0.12	0.00	-0.05	0.00
Products	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	205.8	205.8	206.2	207.9	208.8	208.8	207.0	211.9	-0.01	-0.02	-0.02	-0.01
Products	274.1	275.3	274.3	273.6	274.0	273.5	268.1	266.6	-0.04	0.10	-0.01	-0.02
OECD Asia Oceania												
Crude	378.6	378.6	377.0	377.4	377.3	385.7	385.4	380.8	-0.02	-0.03	0.00	-0.02
Products	38.9	38.9	38.9	38.9	38.9	36.7	38.6	38.7	0.00	0.00	0.00	0.00
Total OECD												
Crude	1229.2	1229.2	1228.0	1226.5	1221.4	1289.6	1253.7	1242.3	-0.16	-0.05	-0.07	-0.03
Products	315.0	316.2	315.1	314.4	314.9	312.2	308.7	307.4	-0.04	0.10	-0.01	-0.02
Total ⁴	1544.0	1547.7	1544.4	1542.5	1537.9	1604.1	1565.9	1552.4	-0.20	0.06	-0.09	-0.05

* estimated

1 Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

2 Closing stock levels.

3 Total products includes gasoline, middle distillates, fuel oil and other products.

4 Total includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

5 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

Table 4a
INDUSTRY STOCKS¹ ON LAND IN SELECTED COUNTRIES
(million barrels)

	June			July			August			September			October		
	2018	2019	%	2018	2019	%	2018	2019	%	2018	2019	%	2018	2019	%
United States²															
Crude	415.2	464.0	11.8	409.6	442.1	7.9	407.6	430.8	5.7	416.7	426.5	2.4	433.8	444.2	2.4
Motor Gasoline	240.7	229.7	-4.6	234.3	235.2	0.4	236.3	230.4	-2.5	240.0	231.9	-3.4	232.7	224.7	-3.4
Middle Distillate	162.9	173.2	6.3	169.7	183.2	8.0	175.9	181.0	2.9	186.6	178.1	-4.6	169.5	162.5	-4.1
Residual Fuel Oil	30.0	30.3	1.0	29.3	30.6	4.4	27.8	28.6	2.9	28.7	29.9	4.2	29.2	29.6	1.4
Other Products	194.2	229.0	17.9	204.2	235.7	15.4	214.3	246.8	15.2	222.6	249.5	12.1	220.5	240.1	8.9
Total Products	627.8	662.2	5.5	637.5	684.7	7.4	654.3	686.8	5.0	677.9	689.4	1.7	651.9	656.9	0.8
Other ³	168.2	163.8	-2.6	167.4	167.9	0.3	171.0	169.5	-0.9	178.7	188.7	5.6	178.1	191.6	7.5
Total	1209.2	1310.0	8.3	1214.5	1314.7	8.3	1233.7	1307.1	6.9	1273.3	1304.6	2.6	1263.8	1292.6	2.3
Japan															
Crude	92.6	91.9	-0.8	97.1	102.6	5.7	97.0	96.5	-0.5	84.5	85.3	2.1	98.8	88.9	-10.0
Motor Gasoline	9.9	9.5	-4.0	9.3	9.6	3.2	9.9	10.0	1.0	10.3	9.5	-7.8	10.4	10.1	-2.9
Middle Distillate	28.4	28.2	-0.7	30.0	31.0	3.3	34.2	35.8	4.7	35.9	34.6	-3.6	35.9	36.2	0.8
Residual Fuel Oil	8.0	7.8	-2.5	7.4	7.7	4.1	7.9	7.5	-5.1	8.1	7.9	-2.5	8.1	8.1	0.0
Other Products	32.5	35.8	10.2	33.4	37.0	10.8	35.0	42.0	20.0	39.6	39.4	-0.5	38.5	39.0	1.3
Total Products	78.8	81.3	3.2	80.1	85.3	6.5	87.0	95.3	9.5	93.9	91.4	-2.7	92.9	93.4	0.5
Other ³	51.7	53.1	2.7	53.6	53.8	0.4	56.6	56.7	0.2	56.5	54.2	-4.1	55.3	56.0	1.3
Total	223.1	226.3	1.4	230.8	241.7	4.7	240.6	248.5	3.3	234.9	231.9	-1.3	247.0	238.3	-3.5
Germany															
Crude	49.4	47.7	-3.4	48.3	49.7	2.9	47.4	48.5	2.3	40.5	47.1	1.3	48.1	47.6	-1.0
Motor Gasoline	9.4	11.9	26.6	9.8	11.7	19.4	10.1	10.1	0.0	9.8	10.6	8.2	9.6	10.9	13.5
Middle Distillate	25.2	24.8	-1.6	25.1	23.8	-5.2	25.1	24.4	-2.8	23.4	24.1	3.0	21.4	22.9	7.0
Residual Fuel Oil	7.8	5.8	-25.0	7.9	6.6	-16.5	7.6	7.2	-5.3	7.1	7.4	4.2	7.2	7.0	-2.8
Other Products	10.8	10.4	-3.7	10.6	10.5	-0.9	10.9	10.5	-3.7	10.8	10.3	-4.6	9.9	10.2	3.0
Total Products	53.2	53.9	1.3	53.4	52.6	-1.5	53.7	52.2	-2.8	51.1	52.4	2.5	48.1	51.0	6.0
Other ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	102.6	101.6	-1.0	101.7	102.3	0.6	101.1	100.7	-0.4	97.6	99.6	1.9	96.2	98.6	2.6
Italy															
Crude	39.7	45.0	13.4	46.6	42.2	-9.0	44.3	41.6	-6.1	39.6	42.7	7.8	40.1	44.0	9.7
Motor Gasoline	10.9	11.3	3.7	11.8	11.5	-2.5	12.2	11.5	-5.7	11.6	12.5	7.8	13.0	13.1	0.8
Middle Distillate	27.4	28.0	2.2	27.2	28.0	2.9	28.6	30.9	8.0	27.8	31.1	11.9	27.1	29.1	7.4
Residual Fuel Oil	9.8	8.7	-11.2	10.2	8.9	-12.7	9.5	9.4	-1.1	8.8	8.8	0.0	8.4	9.1	8.3
Other Products	12.9	12.4	-3.9	12.7	12.0	-5.5	13.0	12.8	-1.5	12.4	13.8	11.3	12.3	13.8	12.2
Total Products	61.0	60.4	-1.0	61.9	60.4	-2.4	63.3	64.6	2.1	60.6	66.2	9.2	60.8	65.1	7.1
Other ³	15.6	13.8	-11.5	14.6	15.1	3.4	15.8	15.1	-4.4	15.3	15.7	2.6	15.3	15.2	-0.7
Total	116.3	119.2	2.5	123.3	117.7	-4.5	123.4	121.3	-1.7	115.6	124.6	7.9	116.2	124.3	7.0
France															
Crude	15.8	15.8	0.0	13.7	13.5	-1.5	11.0	14.0	27.3	10.8	11.0	1.9	12.9	16.8	30.2
Motor Gasoline	4.1	5.9	43.9	3.2	5.7	78.1	4.2	5.5	31.0	4.7	4.9	4.3	3.6	4.7	30.6
Middle Distillate	18.1	21.1	16.6	19.6	19.6	0.0	20.0	22.1	10.5	19.6	20.1	2.6	16.5	19.3	17.0
Residual Fuel Oil	0.8	0.9	12.5	0.8	1.2	50.0	1.0	1.6	60.0	1.2	0.6	-50.0	1.0	1.2	20.0
Other Products	3.4	4.3	26.5	3.7	4.4	18.9	3.9	4.4	12.8	4.2	4.1	-2.4	4.0	4.0	0.0
Total Products	28.4	32.2	22.0	27.3	30.9	13.2	29.1	33.6	15.5	29.7	29.7	0.0	25.1	29.2	16.3
Other ³	9.3	8.5	-8.6	9.1	6.0	-33.3	8.3	8.4	1.2	7.9	7.5	-5.1	7.9	7.4	-6.3
Total	51.6	55.6	9.7	50.1	52.4	4.6	48.4	56.0	15.7	48.4	48.2	-0.4	46.9	53.4	13.3
United Kingdom															
Crude	34.2	34.1	-0.3	33.0	28.8	-12.7	31.1	27.8	-10.6	28.6	26.2	-8.4	28.9	28.6	-1.0
Motor Gasoline	9.9	8.7	-12.1	10.3	9.2	-10.7	9.6	8.9	-7.3	9.6	9.3	-3.1	9.5	9.4	-1.1
Middle Distillate	23.0	24.3	5.7	24.8	26.6	7.3	25.0	27.5	10.0	24.8	26.3	2.0	23.4	25.9	10.7
Residual Fuel Oil	1.3	1.4	7.7	1.3	1.1	-15.4	1.3	1.3	0.0	1.2	1.4	16.7	1.0	1.4	40.0
Other Products	5.2	6.6	26.9	5.7	6.4	12.3	5.5	7.2	30.9	5.2	7.0	34.6	5.8	7.1	22.4
Total Products	39.4	41.0	4.1	42.1	43.3	2.9	41.4	44.9	8.5	40.8	43.0	5.4	39.7	43.8	10.3
Other ³	8.4	8.9	6.0	7.7	9.5	23.4	7.8	9.7	24.4	8.3	9.0	8.4	8.1	9.0	11.1
Total	82.0	84.0	2.4	82.8	81.6	-1.4	80.3	82.4	2.6	77.7	78.2	0.6	76.7	81.4	6.1
Canada⁴															
Crude	120.9	121.0	0.1	116.9	120.5	3.1	126.0	122.3	-2.9	120.6	122.2	1.3	120.5	123.1	2.2
Motor Gasoline	14.3	13.9	-2.8	15.8	14.2	-10.1	15.1	14.7	-2.6	16.5	14.5	-12.1	16.4	14.8	-9.8
Middle Distillate	17.0	14.9	-12.4	18.3	15.9	-13.1	18.4	15.8	-14.1	18.3	14.4	-21.3	17.3	12.7	-26.6
Residual Fuel Oil	2.3	2.0	-13.0	2.2	2.0	-9.1	2.4	1.5	-37.5	2.3	1.8	-21.7	2.1	1.7	-19.0
Other Products	12.8	9.6	-25.0	12.2	10.6	-13.1	12.3	10.0	-18.7	12.5	9.8	-21.6	12.0	9.2	-23.3
Total Products	46.4	40.4	-12.9	48.5	42.7	-12.0	48.2	42.0	-12.9	49.6	40.5	-18.3	47.8	38.4	-19.7
Other ³	23.0	20.5	-10.9	24.0	22.0	-8.3	25.8	23.8	-7.8	25.3	22.8	-9.9	25.2	22.6	-9.5
Total	190.3	181.9	-4.4	189.4	185.2	-2.2	200.0	188.1	-6.0	195.5	185.6	-5.1	193.5	184.3	-4.8

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and enterprise stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

² US figures exclude US territories.

³ Other includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

⁴ Canadian stock information for recent months is the administration's best estimate. Data are usually finalised three months after first publication.

Table 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES¹
(millions of barrels and days)

	End September 2018		End December 2018		End March 2019		End June 2019		End September 2019 ³	
	Stock	Days Fwd ²	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd
	Level	Demand	Level	Demand	Level	Demand	Level	Demand	Level	Demand
OECD Americas										
Canada	195.5	78	192.3	81	186.1	78	182.0	69	185.6	-
Chile	11.6	32	10.4	28	10.6	28	11.0	31	12.3	-
Mexico	40.6	22	54.7	29	40.5	21	30.6	24	34.3	-
United States ⁴	1935.2	94	1915.3	94	1900.2	93	1956.9	95	1951.4	-
Total⁴	2204.9	86	2194.7	87	2159.4	85	2211.6	86	2205.6	85
OECD Asia Oceania										
Australia	42.6	35	40.7	35	44.0	37	45.8	39	44.8	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	561.2	143	564.8	138	539.7	158	547.7	159	551.6	-
Korea	200.0	79	205.8	70	205.1	83	204.4	79	210.2	-
New Zealand	7.9	42	8.3	43	8.0	40	8.4	47	7.8	-
Total	811.8	100	819.6	98	786.8	106	806.3	105	814.4	100
OECD Europe⁵										
Austria	20.2	73	20.9	80	23.0	80	21.4	71	20.8	-
Belgium	44.0	68	42.0	63	45.8	78	49.1	81	47.5	-
Czech Republic	21.5	97	22.8	110	23.0	100	20.4	86	21.4	-
Denmark	20.8	126	20.3	133	22.1	135	24.4	144	27.2	-
Estonia	2.6	84	2.9	87	2.6	88	2.7	87	2.7	-
Finland	40.0	195	39.9	198	38.5	197	38.9	191	39.2	-
France	164.6	97	160.8	94	169.0	99	169.2	95	160.4	-
Germany	272.6	118	271.0	112	274.5	119	278.7	115	276.6	-
Greece	34.4	113	32.1	110	35.3	116	29.0	85	32.0	-
Hungary	25.6	147	25.6	158	25.8	147	23.8	134	24.9	-
Ireland	9.9	61	10.2	65	10.8	68	9.8	62	8.8	-
Italy	124.5	99	125.1	114	130.5	112	129.4	107	134.9	-
Latvia	2.3	70	2.4	67	4.0	98	3.9	90	3.6	-
Lithuania	6.8	103	6.6	113	7.5	107	6.2	85	8.0	-
Luxembourg	0.5	8	0.5	8	0.5	8	0.6	10	0.6	-
Netherlands	136.0	153	133.3	144	151.2	179	147.0	176	149.1	-
Norway	24.1	121	26.7	161	27.2	165	28.6	151	27.1	-
Poland	76.6	111	79.5	123	80.6	116	77.8	107	79.3	-
Portugal	23.5	102	24.6	107	26.4	105	24.8	99	24.1	-
Slovak Republic	12.0	124	11.8	135	12.0	141	11.2	125	11.7	-
Slovenia	4.8	89	5.0	107	4.9	93	5.1	90	4.8	-
Spain	119.7	89	116.9	87	124.2	93	126.0	95	123.1	-
Sweden	34.5	108	35.8	118	38.3	114	41.9	116	42.8	-
Switzerland	33.0	141	30.8	137	31.6	148	30.7	136	32.1	-
Turkey	87.0	102	87.6	101	87.7	90	87.0	78	88.0	-
United Kingdom	77.5	50	76.4	49	80.7	51	84.0	55	78.3	-
Total	1418.7	101	1410.5	101	1477.7	105	1469.7	101	1469.0	103
Total OECD	4435.4	93	4424.9	93	4434.0	95	4487.6	94	4488.0	93
DAYS OF IEA Net Imports⁶		190		189		191		215		214

¹ Total Stocks are industry and government-controlled stocks (see breakdown in table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and enroute stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.

² Note that days of forward demand represent the stock level divided by the forward quarter average daily demand and is very different from the days of net imports used for the calculation of IEA Emergency Reserves.

³ End September 2019 forward demand figures are IEA Secretariat forecasts.

⁴ US figures exclude US territories. Total includes US territories.

⁵ Data not available for Ireland.

⁶ Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see www.iea.org/netimports.asp).

Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government ¹ controlled Millions of Barrels	Industry	Total	Government ¹ controlled Days of Fwd, Demand ²	Industry
3Q2016	4685	1597	3088	99	34	65
4Q2016	4608	1601	3007	98	34	64
1Q2017	4636	1601	3035	98	34	64
2Q2017	4614	1590	3024	98	33	63
3Q2017	4553	1579	2974	94	33	62
4Q2017	4428	1569	2860	92	33	60
1Q2018	4393	1577	2816	93	33	60
2Q2018	4387	1575	2812	91	33	58
3Q2018	4435	1570	2865	93	33	60
4Q2018	4425	1552	2873	93	33	60
1Q2019	4434	1557	2877	95	33	61
2Q2019	4488	1549	2939	94	32	62
3Q2019	4489	1544	2945	93	32	61

¹ Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

² Days of forward demand calculated using actual demand except in 3Q2019 (when latest forecasts are used).

Table 6
IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS¹
(million barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	change
Saudi Light & Extra Light												
Americas	0.69	0.59	0.66	0.66	0.35	0.15	0.08	-	0.25	-	0.74	-
Europe	0.79	0.69	0.69	0.73	0.70	0.75	0.71	0.74	0.57	0.47	0.71	-0.24
Asia Oceania	1.40	1.56	1.45	1.50	1.62	1.41	1.33	1.35	1.32	1.08	1.57	-0.50
Saudi Medium												
Americas	0.44	0.33	0.30	0.33	0.13	0.21	0.10	0.05	0.21	0.08	0.35	-0.27
Europe	0.01	0.01	0.01	0.01	-	0.01	0.04	0.06	0.05	0.04	-	-
Asia Oceania	0.41	0.37	0.41	0.39	0.24	0.23	0.24	0.30	0.16	0.32	0.46	-0.14
Canada Heavy												
Americas	2.04	2.23	2.41	2.43	2.29	2.19	2.29	2.23	2.28	2.11	2.39	-0.28
Europe	0.01	0.02	0.04	0.02	0.03	0.05	0.05	0.07	0.03	0.02	0.02	0.00
Asia Oceania	-	-	0.00	0.01	-	-	0.01	-	0.02	0.02	-	-
Iraqi Basrah Light²												
Americas	0.42	0.63	0.50	0.32	0.46	0.24	0.32	0.27	0.40	-	0.45	-
Europe	0.61	0.76	0.76	0.92	0.89	0.96	0.96	1.02	0.93	0.69	0.98	-0.29
Asia Oceania	0.46	0.40	0.43	0.42	0.45	0.39	0.24	0.28	0.20	0.25	0.41	-0.16
Kuwait Blend												
Americas	0.14	0.11	0.02	-	-	-	-	-	-	-	-	-
Europe	0.19	0.20	0.13	0.13	0.04	0.11	0.17	0.16	0.21	0.09	0.09	0.00
Asia Oceania	0.66	0.68	0.66	0.62	0.63	0.62	0.64	0.70	0.68	0.47	0.61	-0.14
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.21	0.27	0.16	0.03	0.01	-	-	-	-	-	0.06	-
Asia Oceania	0.01	0.01	0.01	-	0.01	-	-	-	-	-	-	-
Iranian Heavy³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.21	0.52	0.35	0.11	0.09	0.07	-	-	-	-	0.32	-
Asia Oceania	0.52	0.57	0.28	0.02	0.36	0.18	-	-	-	-	0.05	-
BFOE												
Americas	0.02	0.02	0.00	-	-	-	0.01	-	0.02	-	-	-
Europe	0.44	0.45	0.35	0.31	0.39	0.31	0.33	0.33	0.35	0.32	0.31	0.01
Asia Oceania	0.05	0.10	0.09	0.10	-	0.01	0.02	0.07	-	-	0.12	-
Kazakhstan												
Americas	0.01	-	-	-	-	-	-	-	-	-	-	-
Europe	0.70	0.75	0.75	0.71	0.86	0.78	0.75	0.78	0.59	0.67	0.59	0.08
Asia Oceania	0.03	0.10	0.19	0.22	0.17	0.17	0.22	0.20	0.21	0.20	0.20	0.00
Venezuelan 22 API and heavier												
Americas	0.63	0.48	0.44	0.45	0.19	-	-	-	-	-	0.46	-
Europe	0.05	0.04	0.03	0.06	0.10	0.06	0.09	0.08	0.13	0.09	0.03	0.06
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.53	0.58	0.63	0.51	0.54	0.51	0.52	0.64	0.41	0.35	0.53	-0.19
Europe	0.17	0.20	0.21	0.17	0.21	0.21	0.17	0.18	0.13	0.16	0.13	0.03
Asia Oceania	0.05	0.07	0.08	0.09	0.12	0.14	0.13	0.13	0.13	0.16	0.12	0.04
Russian Urals												
Americas	-	0.01	0.01	0.02	0.04	-	0.02	0.02	0.02	-	0.02	-
Europe	1.72	1.64	1.40	1.38	1.38	1.38	1.49	1.41	1.39	1.24	1.27	-0.02
Asia Oceania	-	0.01	0.00	-	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.16	0.07	0.08	0.02	-	0.04	-	-	-	-	0.07	-
Europe	0.27	0.11	0.14	0.08	0.17	0.10	0.20	0.17	0.19	0.17	0.06	0.11
Pacific	0.01	0.01	0.01	0.03	-	-	-	-	-	0.02	0.03	-0.02
Nigerian Light⁴												
Americas	0.07	0.04	0.01	-	-	0.07	0.05	0.16	-	-	-	-
Europe	0.39	0.39	0.53	0.63	0.47	0.58	0.48	0.63	0.55	0.56	0.58	-0.02
Asia Oceania	0.01	0.02	0.02	0.02	0.03	0.00	0.03	0.02	0.03	0.01	0.02	-0.01
Libya Light and Medium												
Americas	-	0.02	-	-	-	0.01	-	-	-	-	-	-
Europe	0.20	0.54	0.62	0.65	0.54	0.72	0.72	0.73	0.70	0.74	0.79	-0.05
Asia Oceania	0.02	0.03	0.02	0.02	0.04	0.03	0.04	0.06	-	0.03	0.03	0.00

¹ Data based on monthly submissions from IEA countries to the crude oil import register (in '000 bbl), subject to availability. May differ from Table B of the Report. IEA Americas includes United States and Canada. IEA Europe includes all countries in OECD Europe except Estonia, Hungary, Slovenia and Latvia. IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

² Iraqi Total minus Kirkuk.

³ Iranian Total minus Iranian Light.

⁴ 33° API and lighter (e.g., Bonny Light, Escravos, Qua Iboe end Ono Condensate).

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Tables

Table 7
REGIONAL OECD IMPORTS^{1,2}
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	% change
Crude Oil												
Americas	4542	4361	3759	3223	2891	2901	2654	2654	2610	2270	3241	-30%
Europe	9437	9902	9814	9864	10014	9574	10309	10420	10035	9895	9967	-1%
Asia Oceania	6659	6849	6657	6834	6852	6323	6310	6632	5731	6085	6764	-10%
Total OECD	20638	21112	20230	19720	19758	18658	19274	19907	18385	18251	18972	-9%
LPG												
Americas	20	20	22	24	35	21	21	18	22	77	21	265%
Europe	441	432	457	470	482	408	408	465	363	443	472	-6%
Asia Oceania	567	551	556	557	587	554	612	644	606	485	545	-11%
Total OECD	1028	1003	1035	1050	1105	983	1041	1128	991	1005	1038	-3%
Naphtha												
Americas	10	19	8	11	5	4	5	5	9	34	26	28%
Europe	348	369	391	364	348	334	310	386	268	353	382	-8%
Asia Oceania	908	978	1018	1085	918	955	1029	1127	942	1005	1045	-4%
Total OECD	1266	1366	1417	1461	1271	1293	1344	1518	1239	1391	1453	-4%
Gasoline³												
Americas	735	727	773	504	595	1045	957	952	812	1221	623	96%
Europe	91	153	110	77	118	148	92	99	112	144	139	3%
Asia Oceania	87	102	108	95	110	111	113	109	147	114	118	-3%
Total OECD	913	983	992	676	822	1305	1161	1160	1072	1479	880	68%
Jet & Kerosene												
Americas	169	171	140	115	138	185	208	199	208	213	106	101%
Europe	502	504	509	476	455	571	558	582	548	505	488	3%
Asia Oceania	73	80	89	121	82	60	68	68	62	100	92	8%
Total OECD	744	755	738	711	675	816	833	849	818	818	687	19%
Gasoil/Diesel												
Americas	67	77	124	125	204	81	72	65	44	305	124	145%
Europe	1304	1337	1339	1224	1396	1289	1286	1319	1258	1373	1208	14%
Asia Oceania	196	196	253	313	233	259	270	312	232	295	314	-6%
Total OECD	1566	1610	1716	1663	1833	1629	1628	1696	1534	1972	1644	20%
Heavy Fuel Oil												
Americas	149	131	161	130	149	104	85	87	73	142	170	-17%
Europe	461	233	197	208	217	224	235	253	203	183	186	-2%
Asia Oceania	153	146	162	149	103	106	116	138	119	66	112	-41%
Total OECD	762	510	520	488	469	434	437	478	396	391	468	-16%
Other Products												
Americas	652	717	670	637	520	730	792	799	695	835	711	18%
Europe	783	1012	1011	937	1006	901	829	856	855	760	941	-17%
Asia Oceania	348	259	282	296	273	292	273	236	296	258	290	-11%
Total OECD	1783	1987	1972	1870	1799	1923	1893	1890	1847	1874	1942	-3%
Total Products												
Americas	1802	1862	1908	1547	1645	2171	2138	2125	1863	2827	1781	59%
Europe	3930	4040	4013	3758	4022	3874	3716	3960	3628	3782	3816	-1%
Asia Oceania	2331	2312	2470	2616	2306	2338	2480	2632	2406	2322	2514	-8%
Total OECD	8063	8214	8390	7920	7973	8383	8336	8718	7896	8931	8111	10%
Total Oil												
Americas	6344	6223	5666	4770	4536	5131	4793	4979	4481	5097	5022	1%
Europe	13387	13942	13827	13420	14036	13449	14027	14360	13663	13678	13782	-1%
Asia Oceania	8990	9160	9127	9450	9158	8661	8790	9264	8137	8407	9279	-9%
Total OECD	28701	29326	28620	27640	27731	27241	27610	28624	26281	27182	28083	-3%

1. Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

2. Excludes intra-regional trade.

3. Includes additives.

Table 7a
REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES^{1,2}
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	% change
Crude Oil												
Americas	4428	4235	3806	3051	2790	2707	2519	2744	2422	2233	3146	-29%
Europe	9051	9436	9088	8912	9100	8773	9383	9514	9235	8829	9281	-5%
Asia Oceania	6429	6553	6210	6188	6311	5753	5640	5967	5110	5401	6179	-13%
Total OECD	19908	20224	18904	18151	18201	17233	17542	18225	16766	16462	18605	-12%
LPG												
Americas	16	16	15	16	27	21	21	18	22	77	18	335%
Europe	329	337	350	349	354	303	274	318	244	291	323	-10%
Asia Oceania	342	205	161	143	85	99	69	82	57	40	89	-55%
Total OECD	687	557	527	509	466	423	363	418	323	408	430	-5%
Naphtha												
Americas	5	16	4	8	1	1	3	1	6	34	22	53%
Europe	329	350	360	305	328	322	283	355	270	316	335	-6%
Asia Oceania	855	931	921	1002	801	865	972	1086	864	932	984	-5%
Total OECD	1189	1297	1286	1315	1130	1188	1258	1443	1140	1282	1341	-4%
Gasoline³												
Americas	246	213	271	210	244	367	386	402	308	801	249	222%
Europe	89	149	105	73	114	142	89	96	109	142	137	3%
Asia Oceania	86	102	85	85	91	58	92	64	133	112	118	-5%
Total OECD	422	464	461	368	449	665	668	661	550	1054	504	108%
Jet & Kerosene												
Americas	72	67	56	37	45	24	55	59	38	66	35	91%
Europe	409	436	445	425	414	521	473	480	447	429	392	10%
Asia Oceania	73	80	89	121	82	60	68	68	62	100	92	8%
Total OECD	554	583	590	582	541	605	597	606	547	595	519	15%
Gasoil/Diesel												
Americas	37	50	100	114	167	40	58	45	35	290	114	154%
Europe	988	1086	1160	1070	1228	1095	1036	1058	1009	1288	1086	20%
Asia Oceania	194	195	253	313	233	259	265	312	232	295	314	-6%
Total OECD	1220	1331	1513	1497	1629	1394	1360	1415	1276	1883	1514	24%
Heavy Fuel Oil												
Americas	130	123	147	117	123	97	81	76	72	139	148	-6%
Europe	436	218	185	190	206	196	205	217	181	152	171	-11%
Asia Oceania	152	146	162	148	101	106	114	132	119	66	112	-41%
Total OECD	718	487	493	454	430	400	400	425	373	356	430	-17%
Other Products												
Americas	526	542	522	481	345	560	615	652	539	642	558	15%
Europe	516	731	702	625	736	655	614	600	633	601	649	-7%
Asia Oceania	269	182	201	206	191	200	189	178	166	199	205	-3%
Total OECD	1311	1455	1425	1312	1272	1415	1417	1431	1368	1443	1412	2%
Total Products												
Americas	1031	1026	1115	982	952	1110	1219	1264	1020	2048	1143	79%
Europe	3097	3307	3307	3037	3382	3235	2975	3123	2894	3230	3093	4%
Asia Oceania	1971	1841	1873	2018	1584	1645	1768	1922	1684	1744	1913	-9%
Total OECD	6100	6175	6295	6037	5918	5990	5962	6299	5577	7022	6150	14%
Total Oil												
Americas	5460	5281	4721	4033	3742	3818	3738	3998	3442	4281	4289	0%
Europe	12149	12744	12395	11949	12482	12007	12358	12637	12129	12059	12374	-3%
Asia Oceania	8400	8394	8082	8206	7895	7397	7409	7889	6773	7145	8092	-12%
Total OECD	26008	26399	25199	24188	24119	23222	23505	24524	22344	23484	24756	-5%

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

² Excludes intra-regional trade

³ Includes additives

Table 7b
INTER-REGIONAL OECD TRANSFERS^{1,2}
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	% change
Crude Oil												
Americas	114	126	153	172	101	253	135	110	197	37	95	-61%
Europe	366	466	726	752	914	802	926	907	801	1067	686	55%
Asia Oceania	230	286	448	645	542	570	670	665	622	684	586	17%
Total OECD	730	888	1326	1569	1557	1625	1731	1682	1619	1789	1367	31%
LPG												
Americas	4	4	7	8	8	0	0	0	0	0	3	-100%
Europe	112	95	107	120	128	104	134	148	119	152	149	2%
Asia Oceania	225	346	395	413	502	455	543	562	549	445	456	-2%
Total OECD	342	445	508	542	639	560	678	709	669	597	608	-2%
Naphtha												
Americas	5	3	4	4	4	3	3	4	3	0	4	-100%
Europe	19	19	31	58	20	12	26	31	18	37	47	-22%
Asia Oceania	52	47	97	83	117	90	57	40	78	73	61	19%
Total OECD	77	69	132	145	140	105	86	75	89	109	112	-3%
Gasoline³												
Americas	489	514	502	294	351	678	571	551	504	420	374	12%
Europe	2	5	5	4	4	6	2	4	3	2	2	1%
Asia Oceania	0	0	23	10	19	56	20	45	15	2	0	na
Total OECD	491	519	530	308	373	740	593	599	522	424	376	13%
Jet & Kerosene												
Americas	97	104	84	78	93	161	151	140	170	147	72	106%
Europe	93	68	64	51	40	50	85	103	101	76	96	-21%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	190	172	148	129	134	211	236	242	271	223	168	33%
Gasoil/Diesel												
Americas	30	28	25	12	37	42	14	20	8	15	10	49%
Europe	315	250	178	155	167	193	249	260	249	74	120	-38%
Asia Oceania	2	1	0	0	0	0	5	0	0	0	0	na
Total OECD	347	279	203	166	204	235	269	280	258	89	130	-31%
Heavy Fuel Oil												
Americas	19	8	15	14	26	6	4	11	1	3	22	-85%
Europe	25	15	12	18	10	28	30	36	22	31	15	107%
Asia Oceania	1	0	0	2	2	0	2	6	0	0	0	na
Total OECD	45	23	27	33	39	36	36	53	23	35	37	-7%
Other Products												
Americas	126	175	157	156	174	170	177	146	157	193	153	26%
Europe	266	280	308	312	270	246	216	256	222	179	293	-39%
Asia Oceania	80	77	81	90	82	92	84	57	100	59	84	-30%
Total OECD	472	532	546	559	526	508	476	459	479	431	530	-19%
Total Products												
Americas	770	836	793	565	693	1060	920	871	843	779	638	22%
Europe	833	733	706	719	640	639	743	837	734	552	723	-24%
Asia Oceania	360	470	597	598	722	693	711	710	742	578	601	-4%
Total OECD	1963	2039	2096	1883	2055	2393	2374	2418	2319	1909	1962	-3%
Total Oil												
Americas	884	962	945	737	794	1314	1055	981	1039	816	733	11%
Europe	1219	1199	1432	1470	1554	1441	1669	1744	1534	1619	1409	15%
Asia Oceania	590	766	1044	1244	1264	1264	1382	1376	1364	1263	1187	6%
Total OECD	2693	2927	3421	3452	3612	4019	4105	4100	3937	3698	3329	11%

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

² Excludes intra-regional trade

³ Includes additives

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Tables

Table 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier Oct 18	change
OECD Americas												
Venezuela	741	618	508	508	285	41	-	-	-	-	506	-
Other Central & South America	1023	928	795	655	850	882	888	995	670	935	668	267
North Sea	109	124	150	172	101	246	135	110	197	37	95	-58
Other OECD Europe	1	-	1	-	-	7	-	-	-	-	-	-
Non-OECD Europe	7	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	75	121	145	94	151	253	209	240	209	155	81	73
Saudi Arabia	1185	1043	983	1037	745	607	555	548	593	523	1080	-557
Kuwait	209	144	78	38	84	48	22	46	-	-	-	-
Iran	-	-	-	-	-	-	-	-	-	-	-	-
Iraq	418	605	519	331	374	329	332	249	400	252	377	-124
Oman	30	14	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	11	20	5	-	-	-	11	-	34	-	-	-
Other Middle East	-	2	-	-	-	-	-	-	-	-	-	-
West Africa ²	451	497	317	222	165	324	332	454	313	218	263	-45
Other Africa	223	214	106	134	121	208	127	182	135	119	139	-20
Asia	46	26	61	34	16	16	43	31	68	31	33	-1
Other	13	4	3	-	-	-	-	-	-	-	-	-
Total	4542	4361	3769	3223	2891	2961	2654	2854	2618	2270	3241	-971
of which Non-OECD	4428	4235	3606	3051	2790	2707	2519	2744	2422	2233	3146	-913
OECD Europe												
Canada	32	45	81	44	66	34	73	146	26	8	74	-66
Mexico + USA	354	419	645	708	848	768	853	760	775	1058	612	447
Venezuela	74	67	57	92	145	73	102	88	147	103	84	39
Other Central & South America	170	160	132	134	117	76	124	126	162	107	157	-50
Non-OECD Europe	11	9	12	11	11	11	11	9	14	19	15	4
Former Soviet Union	4427	4437	4154	4084	4347	4018	4410	4359	4095	4634	4138	496
Saudi Arabia	861	750	818	883	825	852	868	891	834	511	906	-395
Kuwait	194	201	137	116	85	105	143	121	142	51	98	-47
Iran	436	801	536	159	148	77	41	25	49	73	426	-353
Iraq	1000	995	962	1060	1180	1269	1189	1169	1193	913	1007	-94
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	12	6	2	10	-	-	-	-	-	-	-	-
Other Middle East	12	1	-	-	2	8	2	-	-	-	-	-
West Africa ²	1095	960	1115	1143	1146	1099	1179	1266	1307	1307	1133	174
Other Africa	738	1045	1161	1234	1074	1160	1315	1459	1291	1111	1356	-244
Asia	-	2	-	-	-	-	-	-	-	-	-	-
Other	21	5	9	-	18	24	0	0	-	0	-	-
Total	9438	9903	9821	9579	10015	9575	10310	10420	10037	9897	9986	-89
of which Non-OECD	9061	9436	9088	8912	9100	8773	9383	9514	9236	8829	9281	-452
OECD Asia Oceania												
Canada	-	-	3	7	-	-	6	-	18	17	-	-
Mexico + USA	179	199	344	522	542	559	642	600	603	668	461	207
Venezuela	3	8	-	-	-	-	-	-	-	-	-	-
Other Central & South America	27	35	35	42	51	67	51	54	20	20	41	-21
North Sea	51	97	100	117	-	11	22	65	-	-	125	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	341	413	435	459	458	402	488	518	456	368	449	-82
Saudi Arabia	2078	2166	2040	2151	2108	1868	1793	1920	1692	1602	2259	-657
Kuwait	681	671	672	671	680	665	705	748	795	503	665	-163
Iran	469	543	274	11	368	184	-	-	-	-	33	-
Iraq	456	402	435	422	446	388	244	284	199	219	414	-195
Oman	88	42	56	43	54	66	70	48	68	44	82	-39
United Arab Emirates	1154	1147	1098	1135	1108	1240	1257	1462	1037	1553	1064	489
Other Middle East	472	390	450	454	430	387	516	571	531	351	419	-68
West Africa ²	74	66	95	99	73	77	29	37	15	17	138	-121
Other Africa	62	92	105	122	85	72	96	76	64	128	115	14
Non-OECD Asia	339	325	319	322	264	205	184	172	179	288	314	-26
Other	205	253	196	257	185	133	207	76	55	307	184	123
Total	6659	6849	6657	6834	6852	6323	6310	6632	5731	6085	6764	-679
of which Non-OECD	6429	6553	6210	6188	6311	5753	5640	5957	5110	5401	6179	-778
Total OECD Trade	20639	21113	20237	19735	19759	18859	18276	19907	18386	18252	19991	-1739
of which Non-OECD	19908	20224	18904	18161	18201	17233	17542	18225	16766	16462	18605	-2143

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes, and converted to barrels at 7.37 barrels per tonne. Data will differ from Table 6 which is based on submissions in barrels.

² West Africa includes Angola, Nigeria, Gabon, Equatorial Guinea, Congo and Democratic Republic of Congo.

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Table 9
REGIONAL OECD GASOLINE IMPORTS BY SOURCE¹
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	change
OECD Americas												
Venezuela	15	18	23	23	15	-	-	-	-	-	17	-
Other Central & South America	69	42	64	58	81	86	105	109	84	61	61	0
ARA (Belgium Germany Netherlands)	155	178	167	91	95	270	233	238	232	164	117	47
Other Europe	328	326	323	203	232	365	309	285	253	227	257	-30
FSU	90	84	80	52	66	88	125	109	118	125	84	42
Saudi Arabia	-	1	11	28	19	7	4	10	-	-	19	-
Algeria	1	-	1	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	32	24	19	12	10	11	25	17	26	15	17	-1
Singapore	6	10	8	4	-	6	12	19	-	-	11	-
OECD Asia Oceania	6	10	13	-	26	42	29	28	19	30	-	-
Non-OECD Asia (excl. Singapore)	64	63	64	48	71	180	135	142	106	63	64	8
Other	3	3	0	0	-	-	0	1	-	553	-	-
Total²	769	759	794	518	614	1056	978	960	838	1238	636	602
of which Non-OECD	246	213	271	210	244	367	386	402	308	801	249	552
OECD Europe												
OECD Americas	1	4	4	4	3	5	1	1	3	2	2	0
Venezuela	0	-	0	-	-	-	0	-	-	-	-	-
Other Central & South America	1	3	6	9	6	2	2	0	-	7	20	-13
Non-OECD Europe	16	15	11	9	11	21	23	21	41	16	17	-1
FSU	84	89	70	64	67	76	47	57	45	88	88	0
Saudi Arabia	0	0	2	0	1	-	1	3	-	-	-	-
Algeria	1	1	0	1	0	0	-	-	-	-	-	-
Other Middle East & Africa	2	5	4	5	6	4	4	2	7	24	9	15
Singapore	1	2	2	2	2	4	2	2	3	2	2	0
OECD Asia Oceania	1	1	1	-	1	1	1	3	0	-	-	-
Non-OECD Asia (excl. Singapore)	1	3	2	6	0	-	0	0	-	0	0	0
Other	-3	41	20	-9	30	43	17	18	21	21	20	1
Total²	104	183	122	90	126	167	100	107	120	160	168	1
of which Non-OECD	89	149	105	73	114	142	89	96	109	142	137	5
OECD Asia Oceania												
OECD Americas	0	-	4	-	5	-	20	45	15	2	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	13	10	8	40	-	-	-	-	-	-
Other Europe	-	-	7	-	6	15	-	-	-	-	-	-
FSU	-	-	1	-	-	1	-	-	-	-	-	-
Saudi Arabia	0	0	0	2	3	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	-	5	1	-	-	-	-	-	-	-	-	-
Singapore	44	52	49	48	43	29	49	38	71	75	62	13
Non-OECD Asia (excl. Singapore)	27	30	19	21	29	11	26	11	40	18	41	-23
Other	16	15	15	15	17	15	17	15	22	20	15	5
Total²	87	102	109	96	110	111	113	109	147	114	118	-4
of which Non-OECD	86	102	85	85	91	56	92	64	133	112	118	-6
Total OECD Trade²	960	1024	1025	703	850	1324	1190	1175	1105	1511	912	599
of which Non-OECD	422	464	461	368	449	565	568	561	650	1054	504	551

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.² Total figure excludes intra-regional trade.

Table 10
REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE¹
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	change
OECD Americas												
Venezuela	0	2	4	7	3	-	-	-	-	-	-	-
Other Central and South America	10	13	30	46	29	35	47	45	35	65	32	24
ARA (Belgium Germany Netherlands)	3	7	6	-	-	1	2	-	5	2	-	-
Other Europe	9	3	3	-	2	4	2	-	2	-	-	-
FSU	15	6	16	7	7	2	3	-	-	-	8	-
Saudi Arabia	1	2	17	24	13	-	-	-	-	-	47	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	3	4	8	4	8	-	-	-	-	-	-	-
Singapore	1	0	1	3	0	-	-	-	-	-	-	-
OECD Asia Oceania	18	18	15	12	35	36	10	20	1	13	10	3
Non-OECD Asia (excl. Singapore)	9	22	23	22	78	3	8	-	-	3	27	-25
Other	0	0	-	-	28	-	-	-	-	232	-	-
Total²	68	77	124	125	204	81	72	65	44	305	124	181
of which Non-OECD	37	50	100	114	167	40	58	45	35	290	114	176
OECD Europe												
OECD Americas	276	222	154	128	126	159	213	230	209	43	86	-44
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	3	4	1	-	0	-	-	-	-	3	-
Non-OECD Europe	48	48	39	41	41	37	38	26	34	40	54	-13
FSU	663	732	714	641	770	657	650	707	626	698	643	55
Saudi Arabia	130	160	225	196	208	222	189	202	184	174	136	38
Algeria	1	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	70	72	76	94	94	90	70	86	61	66	114	-28
Singapore	20	15	14	20	8	27	39	42	38	45	26	19
OECD Asia Oceania	40	28	25	27	41	34	36	30	40	32	34	-2
Non-OECD Asia (excl. Singapore)	172	125	151	128	188	137	105	71	114	276	136	140
Other	-18	21	12	16	6	8	16	19	1	9	30	-20
Total²	1404	1427	1413	1293	1482	1372	1357	1414	1307	1404	1261	143
of which Non-OECD	988	1088	1180	1070	1228	1095	1036	1058	1009	1298	1086	212
OECD Asia Oceania												
OECD Americas	2	1	-	-	-	-	5	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	5	5	4	5	5	4	4	4	4	3	5	-2
Saudi Arabia	1	-	3	9	-	-	-	-	-	-	25	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	2	1	8	32	10	9	-	-	-	-	45	-
Singapore	86	87	141	174	93	121	96	104	96	184	149	35
Non-OECD Asia (excl. Singapore)	95	96	91	88	119	121	158	198	124	103	84	19
Other	6	7	6	6	6	6	6	6	8	6	6	0
Total²	196	196	253	313	233	259	270	312	232	295	314	-19
of which Non-OECD	184	195	253	313	233	259	285	312	232	295	314	-19
Total OECD Trade²	1669	1701	1791	1731	1919	1713	1700	1791	1683	2004	1699	305
of which Non-OECD	1220	1331	1513	1497	1629	1394	1360	1415	1276	1893	1514	369

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

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Table 11
REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE¹
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier	
											Oct 18	change
OECD Americas												
Venezuela	11	16	6	1	1	0	-	-	-	-	-	-
Other Central and South America	0	1	2	7	6	1	8	-	11	8	2	6
ARA (Belgium Germany Netherlands)	0	-	0	-	-	-	-	-	-	-	-	-
Other Europe	-	0	0	-	-	-	1	2	-	-	-	-
FSU	0	1	0	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	2	1	2	9	1	-	-	-	-	-	-
Algeria	-	0	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	1	3	2	0	4	9	15	4	10	9	1	8
Singapore	0	2	6	8	3	6	4	10	-	-	13	-
OECD Asia Oceania	97	104	84	78	93	161	151	137	170	147	72	76
Non-OECD Asia (excl. Singapore)	55	30	27	9	12	6	28	44	17	10	19	-9
Other	3	13	11	11	11	-	-	-	-	39	-	-
Total²	169	171	140	116	138	185	206	199	208	213	106	107
of which Non-OECD	72	67	66	37	46	24	66	69	38	66	36	31
OECD Europe												
OECD Americas	38	20	32	30	19	13	32	33	38	21	35	-14
Venezuela	6	5	1	0	-	-	-	-	-	-	1	-
Other Central and South America	1	2	2	1	3	-	-	-	-	-	2	-
Non-OECD Europe	4	3	6	6	-	6	1	-	-	-	8	-
FSU	44	33	40	37	38	56	53	52	49	42	37	6
Saudi Arabia	112	94	98	102	88	112	106	112	84	104	98	7
Algeria	14	12	9	8	12	-	17	16	26	17	8	8
Other Middle East and Africa	178	207	197	172	193	237	172	122	164	190	176	14
Singapore	14	28	25	27	11	33	36	51	38	22	23	-1
OECD Asia Oceania	55	48	32	21	21	37	53	70	63	55	62	-7
Non-OECD Asia (excl. Singapore)	51	53	69	73	74	80	89	130	82	56	38	18
Other	-7	1	1	0	0	0	4	-	7	-1	4	-5
Total¹	509	508	512	478	469	574	561	586	552	507	490	16
of which Non-OECD	409	436	446	426	414	521	473	480	447	429	392	37
OECD Asia Oceania												
OECD Americas	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	1	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	1	1	5	-	-	-	-	-	-	8	-
Singapore	24	23	28	19	22	19	25	32	22	29	17	13
Non-OECD Asia (excl. Singapore)	36	34	26	42	27	21	27	11	22	33	36	-3
Other	13	22	33	54	33	19	17	24	18	36	32	6
Total¹	73	80	88	121	82	60	68	68	62	100	92	8
of which Non-OECD	73	80	88	121	82	60	68	68	62	100	92	8
Total OECD Trade²	751	758	741	713	679	819	836	852	821	820	688	131
of which Non-OECD	584	683	690	582	541	605	597	606	547	595	519	77

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.² Total figure excludes intra-regional trade.

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Table 12
REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE¹
 (thousand barrels per day)

	2016	2017	2018	4Q18	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19	Year Earlier Oct 18	change
OECD Americas												
Venezuela	17	16	42	27	27	-	-	-	-	-	32	-
Other Central and South America	49	71	72	63	56	51	38	32	28	50	86	-36
ARA (Belgium Germany Netherlands)	12	5	7	12	12	1	1	4	-	3	22	-19
Other Europe	7	3	7	2	14	5	3	7	1	0	-	-
FSU	49	24	23	15	16	39	40	44	42	13	22	-9
Saudi Arabia	0	-	-	-	8	-	-	-	-	-	-	-
Algeria	4	1	-	-	10	5	1	-	2	24	-	-
Other Middle East and Africa	10	9	7	11	3	2	2	-	-	21	5	17
Singapore	1	3	-	-	4	-	-	-	-	-	-	-
OECD Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Asia (excl. Singapore)	-	1	0	1	-	0	-	-	-	-	2	-
Other	0	0	2	-	-	-	-	-	-	30	-	-
Total²	149	131	161	130	149	104	85	87	73	142	170	-28
of which Non-OECD	130	123	147	117	123	97	81	76	72	139	148	-9
OECD Europe												
OECD Americas	15	6	4	5	1	8	14	16	15	10	7	3
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	2	3	-	6	4	4	2	4	5	-	-
Non-OECD Europe	15	17	17	16	16	29	17	20	11	20	14	6
FSU	448	195	154	155	158	146	167	162	182	115	129	-14
Saudi Arabia	-	0	1	-	-	-	-	-	-	-	-	-
Algeria	3	1	1	-	1	-	-	-	-	-	-	-
Other Middle East and Africa	16	23	15	19	12	17	26	31	10	14	28	-14
Singapore	0	-	-	-	-	-	-	5	-	-	-	-
OECD Asia Oceania	10	9	8	12	10	21	16	20	7	21	8	13
Non-OECD Asia (excl. Singapore)	0	1	0	0	7	1	4	10	-	-	-	-
Other	-18	-8	5	4	14	10	6	4	4	2	4	-1
Total²	496	246	208	212	223	235	255	270	233	188	190	-2
of which Non-OECD	436	218	185	190	206	196	205	217	181	152	171	-19
OECD Asia Oceania												
OECD Americas	-	0	0	2	2	-	2	6	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	1	-	-	-	-	-	-	-	-	-	-	-
FSU	4	9	16	19	7	0	3	-	-	14	11	3
Saudi Arabia	-	-	-	-	-	-	3	-	10	-	-	-
Algeria	-	1	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	5	18	23	16	9	27	49	61	59	-	-	-
Singapore	73	58	37	24	36	21	26	11	19	-	22	-
Non-OECD Asia (excl. Singapore)	69	59	85	88	48	53	33	60	31	52	78	-26
Other	1	0	0	1	0	5	0	0	-	-	1	-
Total²	153	146	162	149	103	106	116	138	119	66	112	-46
of which Non-OECD	162	146	162	148	101	106	114	132	119	66	112	-46
Total OECD Trade³	798	523	531	492	475	445	456	494	425	396	471	-76
of which Non-OECD	718	487	493	454	430	400	400	425	373	356	430	-74

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 13
AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES
 (\$/bbl)

	2016	2017	2018	1Q18	2Q18	3Q18	4Q18	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19
CRUDE OIL PRICES													
IEA CIF Average Import¹													
IEA Americas	38.28	48.68	60.02	57.67	63.54	65.10	52.96	57.81	55.77	56.23	54.20		
IEA Europe	42.18	53.26	70.52	66.44	72.63	74.19	68.77	64.61	60.13	62.13	60.70		
IEA Asia Oceania	41.75	54.13	72.46	66.51	71.62	76.38	75.32	66.29	65.85	63.86	64.68		
IEA Total	40.86	52.05	67.77	63.79	69.38	71.92	65.88	63.15	60.45	60.85	60.04		
FOB Spot													
North Sea Dated	43.72	54.16	71.27	66.79	74.35	75.11	68.75	63.91	58.84	62.57	59.73	63.11	66.83
Brent (Asia) Mth 1	44.65	54.86	72.23	67.51	75.11	76.37	69.87	65.21	60.47	61.08	59.36	62.48	65.79
WTI (Cushing) Mth 1	43.33	50.78	65.20	62.89	68.03	69.63	59.97	57.53	54.84	56.95	53.98	57.16	59.81
Urals (Mediterranean)	42.11	53.26	70.17	65.20	72.80	74.27	68.36	63.73	59.96	61.65	59.28	64.44	67.06
Dubai (1st month)	41.46	53.15	69.65	63.95	72.07	74.20	68.28	63.21	59.09	61.11	59.36	61.91	64.86
Tapls (Dated)	51.84	73.09	69.10	68.87	76.30	77.37	72.15	68.28	63.64	67.68	66.01	70.21	74.22
PRODUCT PRICES													
Rotterdam, Barges FOB													
Premium Unl 10 ppm	54.24	65.80	78.78	73.75	84.88	86.45	69.87	76.12	71.30	70.61	68.25	70.17	69.30
Naphtha	42.90	54.19	64.48	0.00	71.89	72.92	61.61	56.11	49.75	53.42	54.53	59.25	60.37
Jet/Kerosene	53.00	65.92	85.39	81.10	89.09	89.21	86.16	80.42	76.23	80.30	78.74	77.67	79.12
ULSD 10ppm	53.33	66.28	86.22	79.49	88.56	89.69	87.14	78.54	75.44	79.71	78.47	76.14	80.37
Gasoil 0.1 %	52.37	64.88	84.28	78.10	86.59	87.87	84.54	77.10	74.23	78.19	76.16	76.04	78.70
LSFO 1%	34.24	48.72	63.22	56.69	64.21	67.43	64.54	64.31	56.98	63.24	60.94	60.71	67.23
HSFO 3.5%	30.62	45.63	61.13	54.47	62.24	65.85	61.92	57.91	44.74	50.31	36.40	30.22	33.14
Mediterranean, FOB Cargoes													
Premium Unl 10 ppm	55.34	65.83	79.41	74.79	85.07	87.03	70.60	75.45	69.64	70.95	69.38	71.75	70.31
Naphtha	41.55	52.74	66.08	62.47	69.86	71.88	59.96	54.42	48.74	52.40	52.79	56.62	56.98
Jet Aviation Fuel	51.96	65.04	85.37	80.03	88.17	88.35	84.93	78.97	75.41	79.45	77.45	75.48	76.42
ULSD 10ppm	53.39	66.20	86.03	79.37	88.52	89.95	86.25	78.19	75.39	79.58	78.17	77.35	79.23
Gasoil 0.1 %	52.09	64.80	84.74	78.22	87.06	88.45	85.20	77.35	74.87	78.70	76.42	75.87	77.96
LSFO 1%	34.96	49.91	64.31	57.83	65.14	68.39	65.87	65.31	58.26	64.37	62.98	63.16	70.27
HSFO 3.5%	32.94	47.22	62.06	55.69	63.18	66.82	62.61	59.19	46.04	52.24	41.85	30.22	33.62
US Gulf, FOB Pipeline													
Super Unleaded	62.75	73.82	85.71	81.90	93.60	91.86	74.91	88.02	78.81	77.56	76.96	75.62	73.85
Unleaded	56.84	67.98	80.10	76.35	87.24	86.84	69.39	79.86	72.03	70.02	68.31	68.42	68.40
Jet/Kerosene	52.43	65.40	85.12	79.33	87.64	89.51	83.74	80.49	75.56	78.67	77.81	76.38	79.37
ULSD 10 ppm	55.40	67.93	85.94	80.98	88.44	89.72	84.38	78.72	75.06	79.81	78.61	77.00	79.61
No. 6 3% ³	32.12	46.03	60.20	53.92	61.15	64.53	61.00	58.27	45.04	49.01	42.32	35.94	39.09
Singapore, FOB Cargoes													
Premium Unleaded	56.20	67.96	80.21	77.62	84.22	85.72	73.19	73.61	70.08	74.40	74.19	76.11	74.82
Naphtha	42.81	53.99	67.50	63.69	70.90	73.08	62.23	55.68	50.70	54.21	57.14	59.76	63.62
Jet/Kerosene	53.00	65.28	85.05	80.02	87.34	88.72	84.07	78.43	74.57	77.75	75.38	74.89	77.75
Gasoil 0.05%	52.24	65.65	84.33	78.73	88.70	88.53	83.29	78.10	74.37	77.11	75.55	75.22	78.24
LSWR Cracked	39.84	52.47	67.44	59.11	68.02	72.32	70.22	76.47	59.11	63.35	62.85	62.49	58.60
HSFO 180 CST	36.47	50.84	67.04	59.03	67.64	71.78	69.65	67.67	55.75	62.73	47.75	39.34	43.23
HSFO 360 CST 4%	35.63	50.01	66.01	58.13	65.96	70.82	69.07	66.66	54.57	62.33	47.00	38.81	41.87

¹ IEA CIF Average Import price for October is an estimate.

IEA Americas includes United States and Canada.

IEA Europe includes all countries in OECD Europe except Estonia, Hungary and Slovenia.

IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

³ Waterborne

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

December 2019

	NATIONAL CURRENCY *						US DOLLARS					
	Total	% change from		Ex-Tax	% change from		Total	% change from		Ex-Tax	% change from	
	Price	Nov-19	Dec-18	Price	Nov-19	Dec-18	Price	Nov-19	Dec-18	Price	Nov-19	Dec-18
GASOLINE ¹ (per litre)												
France	1.523	1.1	6.7	0.578	2.3	16.1	1.692	1.6	4.2	0.642	2.9	13.3
Germany	1.389	-0.6	-2.9	0.513	-1.2	-6.2	1.543	-0.0	-5.2	0.570	-0.6	-8.4
Italy	1.581	0.4	3.7	0.568	1.1	8.8	1.757	1.0	1.2	0.631	1.6	6.2
Spain	1.308	0.8	7.7	0.608	1.3	12.6	1.453	1.3	5.1	0.676	1.9	9.9
United Kingdom	1.249	-0.5	2.5	0.461	-1.1	6.0	1.636	1.2	6.0	0.604	0.6	9.6
Japan	147.9	0.7	-0.6	80.3	1.1	-1.1	1.355	0.3	2.2	0.735	0.8	1.7
Canada	1.173	-0.7	7.3	0.780	-1.0	10.8	0.891	-0.2	9.6	0.592	-0.5	13.1
United States	0.675	-1.6	8.0	0.548	-2.0	9.4	0.675	-1.6	8.0	0.548	-2.0	9.4
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.458	1.2	2.9	0.606	2.4	6.1	1.620	1.7	0.5	0.673	2.9	3.6
Germany	1.267	1.3	-2.0	0.595	2.4	-5.0	1.408	1.8	-5.1	0.661	3.0	-7.2
Italy	1.477	0.5	0.8	0.594	1.2	1.7	1.641	1.1	-1.6	0.660	1.8	-0.7
Spain	1.226	0.9	5.1	0.634	1.4	6.7	1.362	1.5	2.7	0.704	2.0	4.2
United Kingdom	1.301	-0.2	-1.4	0.504	-0.4	-3.1	1.704	1.5	1.9	0.660	1.3	0.2
Japan	128.4	0.7	-0.5	86.4	1.1	-0.7	1.176	0.4	2.2	0.791	0.7	2.1
Canada	1.285	0.2	5.2	0.972	0.2	6.6	0.976	0.7	7.4	0.738	0.7	8.8
United States	0.807	-0.5	-2.2	0.659	-0.6	-3.2	0.807	-0.5	-2.2	0.659	-0.6	-3.2
DOMESTIC HEATING OIL (per litre)												
France	0.953	2.6	4.0	0.638	3.3	5.0	1.059	3.2	1.6	0.709	3.9	2.6
Germany	0.708	1.8	-4.4	0.533	2.0	-4.9	0.786	2.3	-6.7	0.593	2.5	-7.1
Italy	1.325	0.8	5.9	0.683	1.3	9.8	1.473	1.4	3.4	0.759	1.9	7.2
Spain	0.777	1.2	5.9	0.545	1.4	5.9	0.863	1.7	3.4	0.606	1.9	3.4
United Kingdom	0.586	1.0	0.8	0.447	1.2	1.0	0.768	2.6	4.2	0.585	2.9	4.4
Japan ²	92.1	0.4	-0.1	82.5	0.4	-0.1	0.844	0.1	2.7	0.756	0.1	2.7
Canada	1.194	2.9	7.0	1.076	3.1	7.4	0.907	3.5	9.2	0.817	3.6	9.7
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY ³ (per kg)												
France	0.601	6.0	12.9	0.462	7.9	17.5	0.668	6.6	10.3	0.513	8.5	14.7
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.509	5.9	21.1	0.478	6.3	22.8	0.566	6.5	18.2	0.531	6.9	19.9
Spain	0.458	5.6	5.5	0.441	5.9	5.5	0.509	6.2	3.0	0.491	6.5	3.0
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

¹ Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.

² Kerosene for Japan.

³ VAT excluded from prices for low sulphur fuel oil when refunded to industry.

* Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars.

Table 15
IEA/KBC Global Indicator Refining Margins¹
(\$/bbl)

	Monthly Average					Change	Average for week ending:				
	Sep 19	Oct 19	Nov 19	Dec 19		Dec 19-Nov 19	13 Dec	20 Dec	27 Dec	03 Jan	10 Jan
NW Europe											
Brent (Cracking)	6.42	7.57	4.82	2.01	⬇️	-2.81	0.85	2.03	2.84	4.94	4.01
Urals (Cracking)	6.61	5.61	0.11	0.77	⬆️	0.66	-0.94	1.61	2.14	4.51	2.21
Brent (Hydroskimming)	4.33	5.29	2.23	0.82	⬇️	-1.41	-0.62	1.06	1.90	4.30	4.55
Urals (Hydroskimming)	1.38	-2.64	-9.92	-8.69	⬆️	1.22	-10.31	-7.71	-7.51	-5.02	-6.08
Mediterranean											
Es Sider (Cracking)	7.63	9.24	5.40	3.76	⬇️	-1.64	2.32	4.08	5.19	6.91	5.73
Urals (Cracking)	7.24	7.39	0.63	-0.42	⬇️	-1.05	-1.75	-0.20	1.09	2.89	1.73
Es Sider (Hydroskimming)	5.22	6.68	2.82	2.39	⬇️	-0.43	0.70	2.87	4.15	6.16	6.09
Urals (Hydroskimming)	1.24	-1.06	-10.83	-11.36	⬇️	-0.53	-12.59	-11.06	-9.94	-8.01	-7.74
US Gulf Coast											
Mars (Cracking)	2.65	3.25	-2.36	-3.45	⬇️	-1.09	-4.11	-4.02	-2.22	-2.80	-4.22
50/50 HLS/LLS (Coking)	10.22	12.87	7.90	7.31	⬇️	-0.58	6.31	7.01	9.08	8.22	7.14
50/50 Maya/Mars (Coking)	5.30	9.37	6.87	4.05	⬇️	-2.83	3.59	3.43	4.84	3.53	2.13
ASCI (Coking)	8.56	10.70	6.67	5.01	⬇️	-1.65	4.31	3.97	6.35	5.18	4.05
US Midwest											
30/70 WCS/Bakken (Cracking)	12.11	10.42	7.98	6.18	⬇️	-1.80	6.13	5.28	6.63	6.50	7.57
Bakken (Cracking)	14.85	13.20	11.31	8.71	⬇️	-2.60	8.68	7.40	9.15	8.34	10.47
WTI (Coking)	13.37	13.46	10.88	7.99	⬇️	-2.89	8.27	6.29	8.08	6.13	6.58
30/70 WCS/Bakken (Coking)	15.24	14.88	14.05	11.35	⬇️	-2.70	11.75	9.88	11.17	10.42	12.08
Singapore											
Dubai (Hydroskimming)	3.07	-3.81	-8.55	-9.53	⬇️	-0.98	-9.39	-9.54	-9.21	-8.58	-7.27
Tapis (Hydroskimming)	1.27	0.22	-3.98	-5.14	⬇️	-1.16	-5.44	-4.86	-4.90	-2.65	-2.12
Dubai (Hydrocracking)	6.18	3.31	0.79	1.98	⬆️	1.20	1.97	1.61	1.66	1.88	1.94
Tapis (Hydrocracking)	3.64	4.80	0.78	-1.45	⬇️	-2.22	-1.84	-1.60	-1.72	0.22	-0.70

¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

Source: IEA, KBC Advanced Technologies (KBC)

Table 16
REFINED PRODUCT YIELDS BASED ON TOTAL INPUT (%)¹

	Aug-19	Sep-19	Oct-19	Oct-18	Oct 19 vs Previous Month	Oct 19 vs Previous Year	Oct 19 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.4	1.4	1.1	1.6	-0.3	-0.5	-0.6	1.7
Motor gasoline	43.9	45.3	47.2	47.2	1.9	0.0	0.0	47.2
Jet fuel	9.9	9.6	9.4	9.2	-0.2	0.2	0.5	8.9
Other kerosene	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2
Gasoil/diesel oil	28.1	28.3	28.5	28.3	0.2	0.2	-0.1	28.6
Residual fuel oil	3.1	3.1	2.8	3.2	-0.3	-0.4	-0.9	3.7
Petroleum coke	4.3	4.2	4.3	4.5	0.1	-0.2	-0.3	4.6
Other products	13.4	12.4	11.4	10.5	-1.0	0.8	0.5	10.8
OECD Europe								
Naphtha	7.7	7.7	8.0	8.1	0.3	-0.1	0.4	7.6
Motor gasoline	20.1	20.2	20.7	21.2	0.5	-0.5	-0.3	20.9
Jet fuel	10.1	9.8	9.4	9.5	-0.5	-0.1	1.2	8.2
Other kerosene	2.1	2.2	2.1	2.3	-0.1	-0.2	0.1	2.1
Gasoil/diesel oil	39.7	39.2	39.6	38.3	0.5	1.3	0.0	39.6
Residual fuel oil	8.8	8.4	8.6	9.7	0.2	-1.1	-1.2	9.8
Petroleum coke	1.4	1.5	1.4	1.2	-0.1	0.2	0.2	1.3
Other products	15.3	15.5	14.8	14.5	-0.7	0.3	0.2	14.6
OECD Asia Oceania								
Naphtha	15.6	15.9	16.1	16.4	0.2	-0.3	1.0	15.1
Motor gasoline	22.1	21.6	21.7	22.0	0.1	-0.3	-1.0	22.7
Jet fuel	15.5	15.1	15.8	15.3	0.8	0.6	0.2	15.6
Other kerosene	2.8	3.1	3.5	4.0	0.4	-0.5	-0.8	4.3
Gasoil/diesel oil	29.0	30.2	29.6	28.3	-0.5	1.3	0.4	29.3
Residual fuel oil	6.5	6.4	7.3	6.9	0.9	0.4	0.1	7.2
Petroleum coke	0.4	0.4	0.4	0.3	0.0	0.1	0.0	0.4
Other products	12.2	11.8	11.5	12.3	-0.3	-0.7	-0.3	11.8
OECD Total								
Naphtha	5.9	6.0	6.0	6.4	-0.1	-0.4	-0.1	6.0
Motor gasoline	32.5	33.0	34.1	34.3	1.0	-0.2	-0.1	34.1
Jet fuel	10.9	10.7	10.5	10.3	-0.2	0.1	0.7	9.8
Other kerosene	1.2	1.3	1.4	1.5	0.1	-0.1	-0.2	1.5
Gasoil/diesel oil	32.0	32.1	32.4	31.6	0.3	0.9	0.0	32.4
Residual fuel oil	5.5	5.4	5.5	6.0	0.1	-0.4	-0.9	6.4
Petroleum coke	2.7	2.7	2.7	2.7	0.0	0.0	0.0	2.7
Other products	13.8	13.3	12.5	12.1	-0.7	0.4	0.3	12.3

¹ Due to processing gains and losses, yields in % will not always add up to 100%

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2017	2018	2019	2Q19	3Q19	4Q19	Oct 19	Nov 19	Dec 19
ETHANOL									
OECD Americas ¹	1082	1078	1066	1082	1053	1042	1032	1047	1047
United States	1032	1048	1021	1047	1018	1007	998	1012	1012
Other	30	30	35	34	34	35			
OECD Europe ²	88	98	88	90	96	86	107	74	74
France	13	21	15	17	18	13	18	10	10
Germany	14	14	13	16	16	8	17	3	3
Spain	7	9	9	8	9	11	8	12	12
United Kingdom	11	9	5	5	6	3	10	0	0
Other	42	43	46	44	47	51			
OECD Asia Oceania ³	3	6	6	6	6	6	6	6	6
Australia	3	4	4	4	4	4	4	4	4
Other	0	1	1	1	1	2			
Total OECD Ethanol	1163	1178	1149	1178	1153	1133	1146	1127	1127
Total Non-OECD Ethanol	627	718	810	948	1230	719	1176	731	261
Brazil	478	547	613	751	1035	518	975	530	50
China	56	56	69	67	67	73			
Argentina	19	19	19	19	19	19			
Other	74	95	109	109	109	109	201	201	201
TOTAL ETHANOL	1780	1897	1968	2123	2383	1852	2321	1867	1378
BIODIESEL									
OECD Americas ¹	111	126	126	123	124	139	116	160	160
United States	104	121	119	117	118	129	111	139	139
Other	7	5	6	5	5	10			
OECD Europe ²	266	276	288	286	288	319	286	336	336
France	47	52	52	53	53	52	55	50	50
Germany	62	65	66	66	65	73	60	80	80
Italy	13	15	19	15	18	25			
Spain	34	33	35	33	33	40	34	43	43
Other	109	110	117	118	119	130	112	139	139
OECD Asia Oceania ³	12	12	16	18	18	16	11	18	18
Australia	1	1	1	1	1	1	1	2	2
Other	11	12	15	18	17	15			
Total OECD Biodiesel	388	413	429	428	430	474	413	606	606
Total Non-OECD Biodiesel	293	316	398	397	398	398	398	398	398
Brazil	74	92	101	95	106	108	118	113	93
Argentina*	56	47	43	43	43	43			
Other	163	176	255	259	249	248			
TOTAL BIODIESEL	681	728	827	823	828	872	811	903	903
GLOBAL BIOFUELS	2461	2626	2786	2946	3211	2724	3132	2760	2281

1 As of August 2012 OMR, OECD Americas includes Chile.

2 As of August 2012 OMR, OECD Europe includes Estonia and Slovenia.

3 As of August 2012 OMR, OECD Asia Oceania includes Israel.

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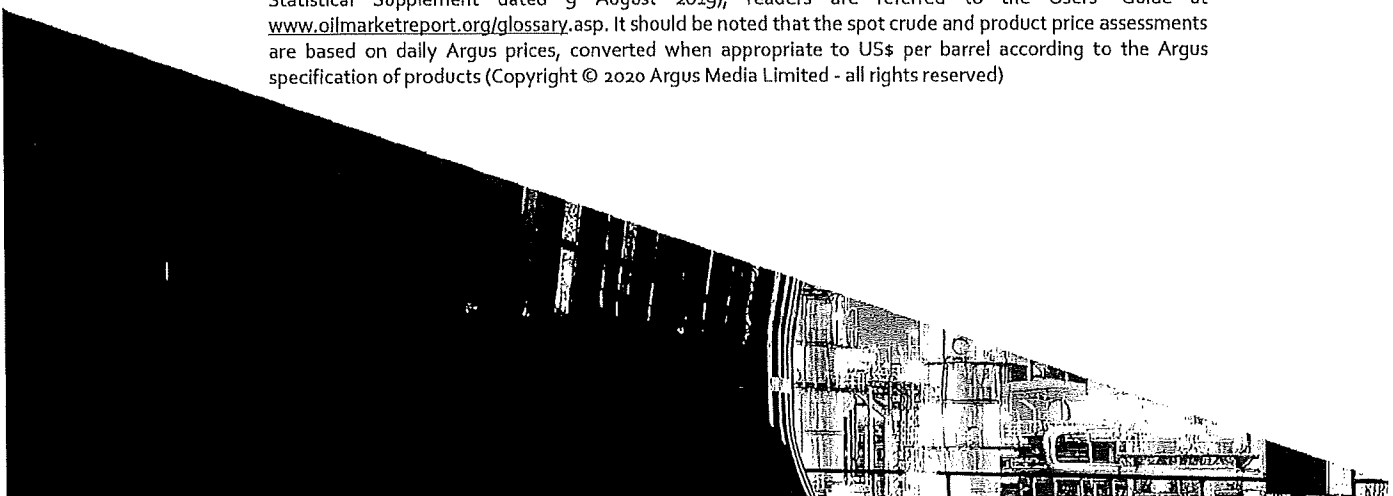
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Next Issue: 13 February 2020

For information on the data sources, definitions, technical terms and general approach used in preparing the Oil Market Report (OMR), Market Report Series_Oil and Annual Statistical Supplement (current issue of the Statistical Supplement dated 9 August 2019), readers are referred to the Users' Guide at www.oilmarketreport.org/glossary.asp. It should be noted that the spot crude and product price assessments are based on daily Argus prices, converted when appropriate to US\$ per barrel according to the Argus specification of products (Copyright © 2020 Argus Media Limited - all rights reserved)



11/3/2020

Oil demand to rebound in 2020



Independent Analysis
For Energy Leaders



Robert P Ryan
3 January 2020

Oil demand to rebound in 2020

Macroeconomic factors promise to boost oil requirements and bolster prices, which may see the market spring a surprise

Oil prices in 2020 will recover smartly from late 2019 levels, as demand regains its mojo and supply growth continues to moderate. A weaker US dollar—brought about by globally accommodative monetary policies and a reduction in economic policy uncertainty—also will support prices.

As such, BCA Research forecasts 2020 Brent prices averaging \$70/bl, well above a consensus forecast of under \$62.40/bl produced by over 50 economists and economist survey in an October Thomson Reuters poll.

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11/3/2020

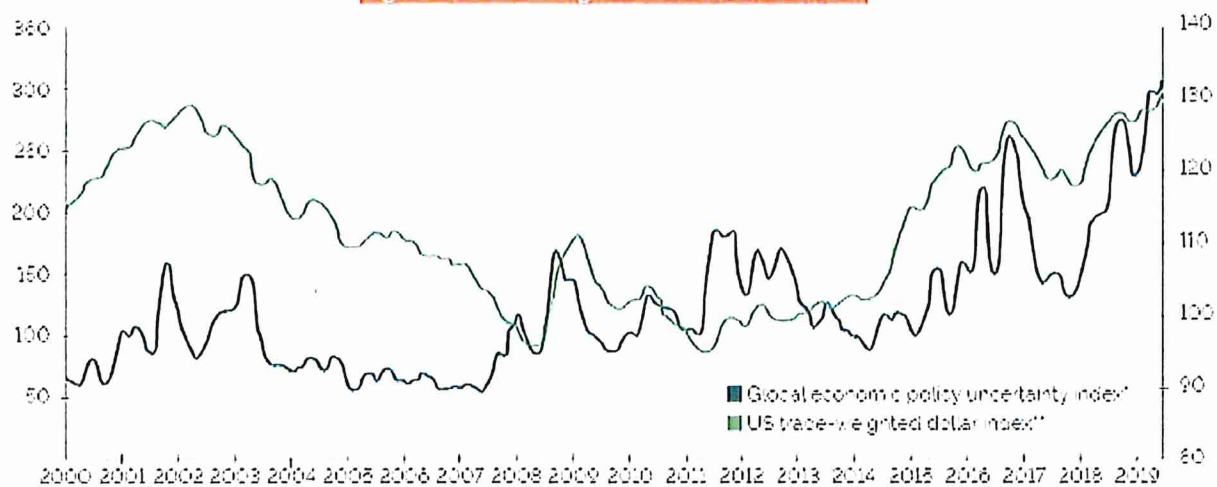
Oil demand to rebound in 2020

The recovery in the benchmark oil price is premised on a relatively upbeat assessment of supply and demand dynamics next year—production discipline by Opec+ and capital market restraints on US shale—oil output will moderate supply growth; globally accommodative financial conditions will support demand growth.

Supply and demand

On the supply side, the market should expect Opec+ crude output to average 29.6mn bl/d in 2020, down by c.300,000bl/d from 2019 levels. In the US, shale oil output is expected to grow by just 900,000bl/d in 2020, compared to 1.3mn bl/d growth in 2019, and overall US crude output will average 13.3mn bl/d. US supply growth will account for most of the 1.5mn bl/d increase in global output we expect for next year, which brings total output to 102.3mn bl/d.

Fig 1 USD trade-weighted index vs. GEPU index



* Shown as a 3-month moving average

** Broad Goods-weighted. Shown as a 3-month moving average

Source: US Federal Reserve, Baker, Bloom and Davis, ECA Research calculations

Empirical and theoretical arguments support a forecast of 1.4mn bl/d of demand growth in 2020, with 1.1mn bl/d of that coming from emerging markets (EM). First, our EM commodity demand 'Nowcast'—a combination of global trade and manufacturing data, econometric outputs and FX rates—indicates EM growth bottomed out and hooked up in the second half of 2019. Secondly, macroeconomic theory argues consumption of industrial commodities (oil and base metals) in EM economies will increase in 2020. The global monetary stimulus deployed in 2019 will counteract the tightening of global financial conditions resulting from the Fed's rate hikes in 2018 and China's deleveraging campaign in 2017-18. Fiscal stimulus also is supporting global demand growth.

Reducing economic uncertainty

Economic uncertainty, as the global economy experienced in 2019, is destructive of demand, and will remain a key factor for prices in 2020.^[1] While we do expect economic uncertainty to decline next year, it will remain a pertinent issue due to Sino-US tariff tensions, ongoing hostilities in the Mid-East Gulf, and popular discontent with the political status quo globally. But any reduction in economic uncertainty will also translate to lower safe-haven demand for the US dollar (USD).

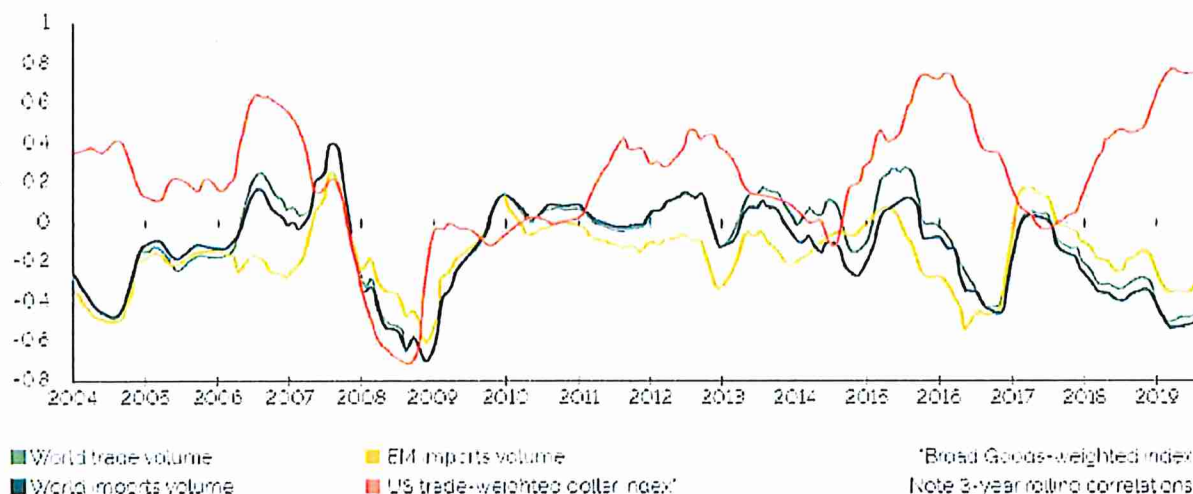
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Oil demand to rebound in 2020

Oil is denominated and invoiced in USD, and a strong USD—measured using the Fed's broad trade-weighted index for goods—pushes oil prices ex-US higher by raising the local-currency cost of oil for consumers, depressing demand. It also lowers, in relative terms, costs for commodity producers in local currencies, encouraging additional supply at the margin.

Monetary policy will have to remain accommodative for the momentum in global growth—mainly in EM economies—to be sustained. Our research indicates that, in 2017, the GEPU index became highly correlated with the broad trade-weighted USD and negatively correlated with EM trade volumes. This latter relationship is a new finding of some importance, as EM import volumes are highly correlated with EM income. Growth in EM income drives oil demand growth. Higher economic uncertainty pushes the USD higher, which reduces EM income and commodity-demand growth.

Fig 2 Global economic policy uncertainty pushes USD up, trade volumes down



Source: CPE World Trade Monitor; Baker, Bloom and Davis; BCA Research calculations

For the USD to no longer be a headwind to oil-demand growth, globally accommodative monetary policies will be forced to offset lingering global economic policy uncertainty that keeps the USD well bid. So far, it would appear this is happening, given the improvement in global financial conditions currently visible in the data. However, it is not a given this will continue. Markets will be forced to keep a weather eye on these conditions going forward.

[1] We measure this using the Baker-Bloom-Davis Global Economic Policy Uncertainty (GEPU) index. The GEPU GDP-weighted index of newspaper headlines containing a list of words related economic uncertainty. Newspapers from 20 countries representing almost 80% of global GDP are used. Please see GEPU and Baker-Bloom-Davis.

Robert P Ryan, Senior Vice-President, Chief Commodity & Energy Strategist, BCA Research

Keep up-to-date with how the predictions in Outlook 2020 are playing out and get a first look at the themes that will shape Outlook 2021, as well as with relevant events such as the Outlook launch party and publishing schedules, by subscribing to Petroleum Economist's bi-monthly Outlook newsletter. <http://go.pardot.com/l/45692/2020-01-17/89x558>

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Cushing, OK WTI Spot Price FOB (Dollars per Barrel)

Week Of	Mon	Tue	Wed	Thu	Fri
2019 Dec- 2 to Dec- 6	55.97	56.15	58.46	58.42	59.20
2019 Dec- 9 to Dec-13	58.99	59.22	58.74	59.18	60.11
2019 Dec-16 to Dec-20	60.21	60.88	60.93	61.30	60.43
2019 Dec-23 to Dec-27	60.51	61.17		61.72	61.76
2019 Dec-30 to Jan- 3	61.66	61.14		61.17	63.00
2020 Jan- 6 to Jan-10	63.27	62.70	59.65	59.56	59.02
2020 Jan-13 to Jan-17	58.17	58.34	57.86	58.52	58.55
2020 Jan-20 to Jan-24		58.25	56.76	55.51	54.09
2020 Jan-27 to Jan-31	53.09	53.33	53.29	52.19	51.58
2020 Feb- 3 to Feb- 7	50.06	49.59	50.87	50.94	50.34
2020 Feb-10 to Feb-14	49.59	50.00	51.13	51.41	52.03
2020 Feb-17 to Feb-21		52.10	53.31	53.77	53.36
2020 Feb-24 to Feb-28	51.36	49.78	48.67	47.17	44.83
2020 Mar- 2 to Mar- 6	46.78	47.27	46.78	45.90	41.14
2020 Mar- 9 to Mar-13	31.05	34.47	33.13	31.56	31.72
2020 Mar-16 to Mar-20	28.96	26.96	20.48	25.09	19.48
2020 Mar-23 to Mar-27	23.33	21.03	20.75	16.60	15.48
2020 Mar-30 to Apr- 3	14.10	20.51	20.28	25.18	28.36
2020 Apr- 6 to Apr-10	26.21	23.54	24.97	22.90	
2020 Apr-13 to Apr-17	22.36	20.15	19.96	19.82	18.31
2020 Apr-20 to Apr-24	-36.98	8.91	13.64	15.06	15.99
2020 Apr-27 to May- 1	12.17	12.40	15.04	19.23	19.72
2020 May- 4 to May- 8	20.47	24.56	23.88	23.68	24.73
2020 May-11 to May-15	24.02	25.76	25.37	27.40	29.44
2020 May-18 to May-22	31.83	32.30	33.56	34.30	33.49
2020 May-25 to May-29		34.70	32.80	33.67	35.57
2020 Jun- 1 to Jun- 5	35.49	36.88	37.33	37.42	39.49
2020 Jun- 8 to Jun-12	38.17	38.98	39.54	36.43	36.24
2020 Jun-15 to Jun-19	37.07	38.26	37.91	38.79	39.72
2020 Jun-22 to Jun-26	40.60	40.40	37.91	38.66	38.53
2020 Jun-29 to Jul- 3	39.67	39.27	39.88	40.57	
2020 Jul- 6 to Jul-10	40.51	40.59	40.91	39.64	40.56
2020 Jul-13 to Jul-17	40.06	40.30	41.20	40.74	40.55
2020 Jul-20 to Jul-24	40.83	41.76	41.88	40.99	41.23
2020 Jul-27 to Jul-31	41.46	40.89	41.13	39.85	40.10

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2020 Aug- 3 to Aug- 7	40.83	41.67	42.25	41.93	41.16
2020 Aug-10 to Aug-14	41.94	41.53	42.60	42.26	42.05
2020 Aug-17 to Aug-21	42.89	42.89	42.91	42.62	42.32
2020 Aug-24 to Aug-28	42.44	43.17	43.21	42.88	42.96
2020 Aug-31 to Sep- 4	42.61	42.76	42.76	41.39	39.69
2020 Sep- 7 to Sep-11		36.87	38.05	37.25	37.33
2020 Sep-14 to Sep-18	37.23	38.29	40.17	40.99	41.09
2020 Sep-21 to Sep-25	39.26	39.55	39.92	40.11	40.06
2020 Sep-28 to Oct- 2	40.47	39.03	40.05	38.51	36.90
2020 Oct- 5 to Oct- 9	39.12	40.52	39.82	41.04	40.44
2020 Oct-12 to Oct-16	39.22	40.03	40.86	40.84	40.70
2020 Oct-19 to Oct-23	40.69	41.37	39.88	40.46	39.73
2020 Oct-26 to Oct-30	38.39				



U.S. LEGAL NEWS

JULY 20, 2020 / 12:45 AM / UPDATED 3 MONTHS AGO

Oil firm BJ Services files for Chapter 11 bankruptcy

By Reuters Staff



(Reuters) - Oilfield services firm BJ Services filed for Chapter 11 bankruptcy protection early on Monday, following a severe cut in demand and cash crunch due to the coronavirus pandemic.

The company, which offers hydraulic fracturing of shale wells, said it was in discussions with bidders for sale of its cementing business and portions of its fracking operations.

"Severe downturn in activity and subsequent lack of liquidity resulted in an unmanageable capital structure", Chief Executive Officer Warren Zemplak said, and added BJ Services was working with its lenders to get liquidity to fund the sale.

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